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Nuclear proliferation and moderation of regional conflicts

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City University of New York, 1994

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NUCLEAR PROLIFERATION

AND

MODERATION OF REGIONAL CONFLICTS

by

Yacov Harel

A dissertation submitted to the Graduate Faculty in
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ABSTRACT

**NUCLEAR PROLIFERATION AND MODERATION OF REGIONAL
CONFLICTS**

by

Yacov Harel

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This dissertation analyzes the introduction of nuclear capability and strategy into conflictive regions, and the likely political effects of the emergent nuclear balances of terror. It examines the applicability of nuclear deterrence as a strategic concept and an existential phenomenon to the management of regional conflict. This study perceives regional nuclearization in terms of nuclear potential, whether nuclear option or bomb in the basement. The central focus is upon the moderation of regional conflicts as a result of nuclearization. The critical question is whether regional nuclearization will have the same political impact that it had on the superpowers, notwithstanding the significant differences between the two nuclear balances which we analyze, and on peace through accommodation. The investigation elaborates the likely political outcomes of nuclear proliferation and the effect on conflict behavior of Secondary Nuclear Powers (SNP). The hypothesis of the study argues that nuclear deterrence among SNPs is likely to reach a sufficient level of stability, induce cooperation and restrain conflicts. These processes may bring about relaxation of

tensions and moderation of conflicts.

The regional case studies reveal tendencies which are similar to the superpowers' behavior. Nuclear proliferation contributes to the creation of regional balances of terror, and encourages reciprocal consciousness of the nuclear threshold. The nuclear consciousness stimulates cooperation in order to reduce risks and enhance stability. The nuclear and political developments are likely to reinforce moderation and restraint of regional conflicts.

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CHAPTER 1

NUCLEAR PROLIFERATION

I. Analytical Directions

This study seeks to analyze the political consequences of the introduction of nuclear capability into conflictive regions--regions in which the major actors are involved in a long lived conflict--where the development of a regional nuclear balance of terror is likely, and the way mutual nuclear deterrence is apt to affect the managing of regional disputes. It strives to examine the ability of new nuclearizing states to follow the path illustrated by the superpowers, the United States and the Soviet Union, from a world-wide conflict toward peace through accommodation. As it is commonly argued, this trend of moderation between the superpowers¹ was affected mainly by the gradual appearance of nuclear capability in their hands.²

The point of departure of this study is quite different from the majority of the literature on nuclear proliferation. The underlying assumption is that the process of nuclearization (going nuclear) in conflict-prone regions is

¹ The term 'superpowers' refers to both the U.S.A. and U.S.S.R., despite the 1991's collapse of the later. The changes in the distribution of capabilities within the international system are not clear yet.

² According to Waltz (1979) it was the bipolar system, determined by nuclear weapons, that assured the no-war.

inevitable, and is already in motion wherever it is felt to be politically necessary. The question of nuclear proliferation is no longer if but when (Beres 1990; Evron 1987; Waltz 1981; Yaniv 1987). Hence, the focus of analysis is not upon the ought of proliferation, but rather upon the more practical how and its political consequences. Would the introduction of nuclear arms into conflictive regions be controllable and manageable, thus allowing for forms of crisis management and prevention, or would a regional, if not global, nuclear holocaust be the most probable outcome of such a process? Would the nuclearization of long lived regional conflicts, with or without the adoption of an overt nuclear deterrence strategy contribute to accommodation and cooperation in arms control efforts, hence moderating the conflict, or would the high dangers and risks involved in this process lead to the escalation of the conflict, with higher tensions and greater costs to the belligerents? The analysis proceeds beyond the question of whether to encourage or discourage the process of regional nuclearization. It examines the likely political outcomes of nuclear proliferation and, in particular, its probable effects on conflict behavior of states.

The key question for research is what accommodations are likely to be made by belligerent actors as a result of accessing nuclear capability. This study examines the experience of the superpowers, evaluates the relevancy of current theories and concepts which are mostly derived from the relationships of the superpowers, and respecified them to

the study of nuclear proliferation in the Third World. Furthermore, the study strives to correlate nuclear developments in conflictive regions with political progressions towards accommodation, arms control and cooperation. This is done through the use of regional cases. In addition to the historical case of the superpowers, two regions are chosen for case studies: The Middle East and South Asia. These regions have one prominent characteristic in common: they bear long lived disputes among major regional actors which have acquired some nuclear potential. The region of South America was considered as another case study, since the rivalry between Brazil and Argentina has its nuclear dimension. Yet, it was not analyzed here because of the lack of severe long-lived conflict between the belligerents, such as can be found in the Middle East and South Asia.

In order to accomplish these tasks, it is essential to redefine some of the central concepts associated with the field of nuclear strategy, and to determine their applicability to the particular purpose of analyzing regional actors which are going nuclear.¹ Following, some concepts are concisely defined.

A. Secondary Nuclear Powers (SNP): The focal point for these cases rests upon states that are acting as regional powers within the regional context, and are believed to have nuclear capability. The term SNP is suggested here for a

¹ The next chapter elaborates the key concepts.

proper distinction between the several types of actors in the international arena. A SNP is an actor with vital regional interests defined in terms of force. The category is distinguished from that of a superpower who has global interests and immense nuclear capabilities. A Secondary Nuclear Power is also differentiated from an explicitly declared nuclear power. In the regional cases, the term SNP refers to dyadic belligerents: India and Pakistan, and Israel and any possible Arab leader or coalition.

The process of regional nuclearization involves two parallel progressions. First is the acquisition and buildup of a nuclear capability. The mere appearance of *nuclear potential*--the technological capacity to go nuclear (Schelling 1976)--in any arena requires a continuous development of strategic structures, such as delivery means, safeguards, and control systems.

The second progression is the unfolding of political implications of the process of nuclearization, primarily evaluation of the political will and nuclear sophistication, and the adoption of a proper deterrent strategy. When nuclearization ensues, these progressions are inseparable. Hence, this analysis distinguishes between two research inquiries. First, what are the trends of nuclear development in Third World regions, as well as in each of the countries chosen for the study. Second, when nuclear potential is recognized, do these countries develop nuclear consciousness--an awareness of the inherent costs of nuclear exchange, which

we propose is a prerequisite to any accommodation and political collaboration.

B. Nuclearization: Traditionally, a candidate for the 'nuclear club' had to acquire a nuclear device and explosion grade fissile material, to conduct an observable nuclear test (Spector 1990, and to adopt an overt nuclear deterrence strategy. However, when dealing with nuclear proliferation in Third World countries, one should note the basic dissimilarities between the five major nuclear powers, on the one hand, and the nuclearizing states studied here, on the other. While the former are considered as 'members', the latter are not viewed as declared nuclear states, even when they are believed or known to have nuclear weapons. Thus, this study adopts the concept of nuclearization to suggest that a state is in the process of going nuclear and has some *nuclear potential*. It means that "the main significance of nuclear weapons is not their parade-ground display but the possibility of their being used" (Schelling 1976, 78). The utility is its ability to highlight different stages of nuclear development, such as 'nuclear option' and 'bomb in the basement' (Harkabi 1983), or even undeclared nuclear state. Thus, "At any time one of those governments decides to explode a nuclear bomb, it will be able to do so with some lapse in time" (Schelling 1976, 79).

Any regional system which undergoes a nuclearization process might face a transitional period, from one actor's monopoly over nuclear capability toward parallel nuclear

capability. It is quite expected that the process of nuclearization would differ from one actor to another, therefore, the more productive state would obtain the bomb (in the arsenal or in the basement) before its adversary and enjoy a transient regional nuclear monopoly. It is also logical to expect that the adversary would not remain unconcerned and calm, and would strive to accomplish nuclearization. Moreover, the weaker state is not likely to enter into serious negotiations to resolve long-lived conflicts until it can break the monopoly on nuclear weapons and reach parity.

Similarly, one may reasonably anticipate that the monopolist actor would not feel obliged to negotiate seriously lacking mutuality of nuclear threat. Furthermore, it is more likely that such an actor may use diplomacy--initiate international pressure against further proliferation, as the superpowers did in relation to China, or try to delay the inevitable--as did Israel when striking the Iraqi Osirak nuclear reactor (1981). Nevertheless, it is a basic assumption of this study that the process of nuclearization can rarely be stopped. It can be delayed or suspended, but once the knowledge, materials, and primarily the political will is there, nuclearization will proceed. Therefore, this study concentrates on dyadic nuclear systems. It assumes that the cases chosen for study here reached this stage or are about to reach it in the near future.

II. Nuclear Proliferation: The Global Path

The global spread of nuclear weapons is taking two directions: vertical and horizontal (Dunn 1982). Vertical proliferation refers to the nuclear arms race among declared nuclear powers who acquire more or better bombs. Horizontal proliferation describes the process of additional states obtaining nuclear capability. These states are generally perceived as undeclared nuclear powers. Horizontal nuclear proliferation is the subject of this study.

One may distinguish between two paths of global nuclear spread. The primary explicit road which was shared by the five members of the nuclear club of declared nuclear powers between the early 1940s and 1964, and the 'silent spread' (Spector 1990) which was taken mainly by Third World countries, the undeclared nuclear powers.

The American 'Manhattan Project' has marked the beginning of the action-reaction character of nuclear proliferation.⁴ This initial introduction of nuclear arms into international politics was spurred on by the fear that Nazi Germany was seeking to build an atomic bomb (Lawrence and Larus 1974). After Germany's unconditional surrender the Americans rushed to complete the bomb in time in order to alter the war in the Pacific. It was hoped that the bomb would inflict a tremendous shock sufficient to force Japan's surrender and

⁴ Although confidential at the time, nuclear research and development by the U.S.A. was anticipated by most fighting actors.

preclude the need for invasion (Feis 1970). On August 6 and 9 1945, the U.S.A. detonated the first (and last) atomic bombs ever used in warfare on Hiroshima and Nagasaki, and brought World War II to an end. Aside from its military uses, American policy makers saw the political advantages embedded in the new arms, and hoped that the bomb would strengthen the bargaining position of the United States vis-a-vis the Soviet Union (Feis 1970). This belief in the political benefits provided by the bomb, together with an action-reaction chain (where one actor's nuclearization encourages his adversary to react in the same manner), played a leading role in other countries' decisions to go nuclear (Dunn 1982).

The Soviet Union, the second nuclearizing state, rejected in 1946 the Baruch Plan, an American plan presented to the U.N., proposing the creation of an international body for the control of atomic energy and weapons. Three years later, in 1949, the U.S.S.R. detonated its first atomic bomb (Herken 1980). The fear of potential invaders, as well as the need to equal the American capability and possession of the bomb were the main motivations for the Soviet nuclear production (Ulam 1968).

Britain was the third state to go nuclear by exploding its first atomic bomb in 1952. The British essential nuclear incentives were international status and aspirations for global influence (Rosecrance 1964).

The British acquisition of nuclear weapons
appears to have been a rational and logical route

to follow for a nation which believed nuclear weapons properly belonged in the hands of great nations, and which viewed itself as a great nation with global purposes (Lawrence and Larus 1974, 2).

Britain's nuclearization helped to stimulate France's incentives to become the fourth member in the nuclear club. Dunn stated:

[The decision to go nuclear was] Critically influenced by the desire to maintain equal status with Britain and to reassert France's international prestige. Acquisition of nuclear weapons was seen to symbolize both France's refusal to accept second-rank status and its claim to influence within the Atlantic Alliance. . . . If nuclear weapons were necessary and appropriate for Britain, they were appropriate for France (Dunn 1982, 9).

Another justification for the possession of nuclear arms was the need to deter the Soviets from threatening Western Europe, and France in particular (Kohl 1971).

The fifth state to join the nuclear club was China. With some Soviet support (that ended in 1959), China continued its efforts with the detonation of its first nuclear device in 1964. Halperin (1965) stressed that fear of the U.S.A. was the major incentive for China's nuclear aspirations. Later on, the need to deter a possible Soviet attack played a

central role in stimulating a further development of the nuclear force.

The U.S.A. and U.S.S.R., being concerned about the on-going spread of nuclear arms and anxious to reach arms control agreements for their relationships, introduced the Non-Proliferation Treaty (NPT) in 1968. The NPT came into effect in 1970, when Britain and forty states ratified the treaty. France and China took no part in it,⁵ and neither did some nuclearizing states (Baylis 1982).

On 18 May 1974, India detonated an atomic device. This brought an end to the 'no new members' regime which was set by the NPT and maintained by the five members' nuclear club. India was not immediately considered as the sixth member because the explosion was officially declared as a 'peaceful nuclear explosion experiment' and was not followed by the development of nuclear arms. Moreover, in the days following the explosion, then Indian prime minister Indira Gandhi repeatedly issued assurances that India had no intention to build nuclear weapons (Subrahmanyam, in Lawrence and Larus 1974). India's initial incentive for nuclearization was a reaction to the Chinese nuclear program.

During this era many countries, such as Canada, West Germany, Japan, Italy, Austria, Sweden, and Yugoslavia, technically capable of manufacturing nuclear weapons, chose not to do so. They decided not to translate knowledge into

⁵ Nevertheless, the French assured they would behave as if they had been signatories of the NPT although they were not willing to sign it.

nuclear armaments and preferred to take cover under the superpowers' nuclear umbrella. Other states have achieved or are very close to achieving the knowledge necessary for the production of nuclear devices, and several of them are believed to have actually built the weapons. The motivation of these states is enhanced by the fact that they are involved in regional conflicts. India is one example, Israel is thought to have obtained nuclear weapons in late 1960's, Pakistan apparently acquired material for the bomb in 1986, Iraq sought to produce the necessary materials for nuclear weapons, and nuclear programs are in motion in Egypt, Syria and Iran.

This is the path of the silent spread of nuclear arms. No new country has declared that it had nuclear arms since 1964, when China joined the U.S.A., U.S.S.R., Britain and France as the fifth member of the nuclear club. Similarly, since India's single nuclear detonation in 1974, no country is known to have tested a nuclear device for the first time, nor has India itself conducted further tests.⁶ Moreover, those countries that have sought to develop nuclear arms since the mid-1960s have attempted to shield their activities from external scrutiny by denying any interest in such weapons and shrouding their activities in secrecy.

Since 1964, Israel (late 1960s), Pakistan (1986), and South Africa (1980-1981). . . [emerged]

⁶ Israel may have conducted a clandestine nuclear test in the South Atlantic on 22 September 1979, probably with the assistance of South Africa (Meyer 1984).

as de-facto nuclear weapons states, i.e., countries that have deployed nuclear weapons or could do so rapidly in a crisis. Other countries, such as Brazil, Argentina, Libya, Iraq, Iran, North Korea, and Taiwan, have also taken important steps toward nuclear arms, though none has yet reached this level (Spector 1990, 5).

III. Hypothesis

The hypothesis of this study is: *Nuclear proliferation in conflictive regions, and the consequent development of a reputation for deterrence capability, should contribute to moderation of long-lived conflicts.*

1. The introduction of nuclear arms into conflictive regions, and the evolution of the perception of mutual nuclear deterrence, cause the opponents to feel highly vulnerable, and exposed to unacceptable costs.

2. The significant risks, dangers and vulnerability, imposed on actors that possess nuclear arms, would normally motivate them to develop a second strike capability. Nonetheless, the emergent balance of terror, based on fear, would encourage reciprocal nuclear consciousness and sensitivity to costs. It stimulates the emergence of a clear nuclear threshold between conventional and nuclear force. The clarity engendered by the nuclear threshold should in turn make leaders conscious of the danger of escalation in a future crisis.

3. Effective regional deterrence among conflicting actors promotes stability, which was not present before, in the region. The actors are likely to resort to an arms control dialogue, and then to other modes of cooperation, in order to reduce risks the of escalation.

4. Nuclearization and its political consequences, are apt to promote restraint, contribute to accommodation, and lead to moderation of pre-existing regional conflicts.

IV. Rationale For This Study and Literature Review

The potential usefulness of this study stems from several sources. First, in spite of the widely expressed wish for non-proliferation, nuclear knowledge and capability spread in the world. The process of nuclearization has so far been unavoidable. Since nuclear proliferation is already in motion in conflictive regions, and complete nuclear disarmament is not foreseen in the near future, it is relevant to study the likely implications of this course in two conflict-prone regions.

Second, the possibility of nuclear war is a concern not only of the regional actors but of the superpowers as well. Therefore, it is also in the interest of the superpowers to control and manage the effects of proliferation. The superpowers have managed to achieve a sufficient level of deterrence and stability in their conflictive relations through the threat of Mutual Assured Destruction (MAD), on the one hand, and accommodation followed by partial cooperation on the other. Yet, one should notice that efforts of arms control between the superpowers have intensified thanks to second strike capability and MAD, on the one hand, and to the spread of nuclear capability, on the other. The likelihood of regional actors following the superpowers' example with respect to arms control is enhanced by the self-interest of the superpowers in fostering accommodation after a nuclear

threat emerges in a region.

Third, the inevitable nuclearization of some regional belligerents advances the notion of nuclear threshold.⁷ This is the dividing line between "nuclear use and no-use" (Schelling 1966). The critical question is whether when SNPs approach this threshold conflicts will tend to intensify, as seems logical, or whether disputes with a nuclear dimension will encourage the superpowers or the U.N. to intervene in dispute settlement, in order to assure nuclear peace (Bargman 1977). The notion of *nuclear threshold* has not yet been applied in terms of regional conflict in the literature.

It may be argued that in the regional context, non-nuclear weapons of mass destruction, such as chemical and biological weapons (CBW), may serve as a substitute to nuclear weapons in a mutual deterrence system. This argument was popular mainly with regard to the Middle East, where Iraq, Egypt and Syria acquired CBWs. This analysis does not accept the non-nuclear weapons of mass destruction as a replacement for nuclear capability in the formation of mutual nuclear deterrence. This is so despite the terrorizing effect embedded in the nature of CBWs. The experience of Middle Eastern countries shows the inapplicability of CBWs as a weapon for deterrence in nuclear deterrence relationships. CBWs were used in the region by Egypt in Yemen (1962) and by Iraq against Iran and the Kurds (1980s). Nevertheless, they were used in war and caused great number of casualties but had

⁷ This concept is discussed in the following chapters.

minor influence on political behavior or military actions. They had no deterring effect at all, since they could not convince the opponent to refrain from the undesired behavior. Iraq also attempted to use CBWs as a deterrent weapon against the allied forces and against Israel during the Gulf War, 1990. The threat had marginal effect, if at all, on the political and military behavior of the allied forces. Israel, although its population was terrorized by the severe threat, demonstrated the ability to reach a high level of defense against CBWs.

The literature on nuclear proliferation is primarily concerned with stabilizing deterrence between the superpowers in a world of nuclear plenty (Kahn 1961). Scholars perceive nuclear proliferation as an obstacle to world stability as perceived by the superpowers, and argue that as more states possess nuclear arms, the danger of a prospective catastrophe increases (Dunn 1982). It is particularly so, when nuclear arms are introduced into situations of regional conflict (Coffey 1977). Thus, more secondary nuclear powers means higher chances of a nuclear exchange and greater risks of direct military confrontation between the superpowers (Krieger 1977). States that intend overtly to enter the nuclear club, or Secondary Nuclear Powers (SNP), are conceived as being much less responsible than the present nuclear powers (Williams 1982).

The main reason for the strong objection to nuclear proliferation is the enormous gap between the superpowers on

the one hand, and SNPs on the other, with respect to capability and experience (Meyer 1984). As a result of this gap, nuclearizing powers are not capable of achieving the sufficient level of stability reached by the superpowers. The most widely mentioned dangers and risks which are involved in nuclear proliferation are: the high intensity of regional disputes; internal instability of the states involved; questionable rationality of leaders, and their readiness to take higher risks; lack of safeguards and proper second strike capability; and hazardous probability of unintentional war as a product of accidents, terrorism, or unauthorized use of the weapons.

States with oversimplified but extremely militant ideologies, states profoundly dissatisfied with the status quo, states with underdeveloped infrastructure, and states with underdeveloped political systems might well regard the acquisition of nuclear weapons as an attractive option. The consequence would be an unstable world of many nuclear states, where deterrence lacks credibility.

Additionally, it is often stated that nuclearized regional conflicts are liable to bring about the involvement of the superpowers. Thus, more nuclear powers may increase the risks of nuclear war or international crises triggering nuclear confrontation (Feldman 1982). The somewhat simple calculations and assessments of behavior in times of crisis between the two superpowers, where ally-foe relations are clear, will be replaced by complex calculations and fears

accompanying a multi-polar system (Waltz 1979).

The objection to nuclear proliferation in the literature is based upon three primary arguments about the probable instability of regional deterrence. First, the internal instability of SNPs is a source of different possible versions of unpremeditated or accidental war (Kahn 1960; Harkabi 1983). Mandelbaum (in Gompert 1977) stressed that the wider the proliferation far from the world industrial center, the greater the danger of irresponsible people in charge of these weapons. Evron (1976) perceived the low level of rational decision making in new nuclear states as the main prospective stumbling-bloc to stable deterrence world-wide. In addition, the unstable regimes are more prone to resort to force, either to ease local tensions or because of their militant nature (Dunn 1982).

The second body of arguments dealt with ideology, lack of nuclear education and the involvement in regional conflict as variables of escalation. The irresponsible character of SNPs, together with the insufficient stability in their regions, encourages the use of the weapon rather than the skillful non-use of it. Evron (1987) argued that radical or fundamentalist regimes tend to export the revolutionary message over their borders. This tendency necessarily brings about inter-state clashes, and is a strong incentive to the resort to military violence. Moreover, regional conflicts tend to stimulate arms races among hostile powers, and will most probably do so after the introduction of nuclear arms. Where states are bitter

enemies, the temptation to use nuclear arms is enormous. The militarist and authoritarian character of many new nuclearizing states, and their lack of nuclear experience, contribute to instability (Tucker 1961).

Third, scholars were concerned about new SNPs' ability to form a credible and stable regional deterrence system, based on mutual assured destruction, due to their high vulnerability and their inability to establish a second strike capability (Bader 1968). Vulnerability and an insufficient second strike capability will be followed by increasing insecurity and hostility (Aron 1965). In a situation of reciprocal nuclearization, vulnerability contributes to temptations of preemptive strikes (Dowty 1978). The adversaries would feel the need to "jump the gun" and to strike first in order to prevent the opponent from doing so. Thus, conflicts would tend to escalate faster than under conventional deterrence. Nevertheless, "The reciprocal fear of surprise attack invites the adoption of 'launch on warning' postures" (Williams 1982, 86), even in times of relative relaxation. The result would be a state of nuclear chaos (Harkabi 1983; Evans 1963), mainly since small states are unable to develop an effective system of mutual assured destruction (Beres 1990).

There is another stream in the literature on nuclear proliferation that contradicts the aforementioned arguments. The main representatives of this group are Waltz (1981), Feldman (1982), Rosen (1977) and Gallois (1961), who confronted the anti-proliferation literature by challenging

the validity of its arguments.

Gallois (1961) stressed that nuclear arms has one significant trait. Its mere existence intensifies the responsibility of statesmen, and eradicates any impulsive adventurism. Being near such an enormous, terrorizing and lethal weapon induces tolerance and moderation (Gallois 1961). Therefore, a world of nuclear plenty would introduce many systems of balance of terror, and would thus be stable. Rosen, after refuting the "apocalyptic visions and doomsday images [that] have been accepted too readily and out of proportion to the arguments that are given" (Rosen 1977, 1370), hypothesized that a stable system of mutual deterrence may be viable in conflictive regions, and may make a positive contribution to the de-escalation of conflicts. This argument is based on perceptions of fear held by leaders with regard to nuclear capability. Feldman (1982) suggested that the mere high vulnerability of small powers, and the unacceptability of nuclear punishment, would establish a credible deterrence in conflictive regions. Thus, there is no need for second strike capability or methods of crisis management. Waltz (1981) went one step further, by arguing that the more nuclear states the better may we be. He based his conclusion on the analysis of the character of the international system, and drawing on the historical experience of the evolution of nuclear deterrence between the superpowers (Waltz 1981, 3). Hence, Waltz perceived the destructive power of nuclear weapons as the strongest incentive for the non-use of them. "Nuclear

weaponry makes miscalculation difficult because it is hard not to be aware of how much damage a small number of warheads can do. . . . When the active use of force threatens to bring great losses, wars become less likely" (Waltz 1981, 30). Waltz did not explain why small states will follow the example of the superpowers, and what will be the effect of nuclear spread into regions already in conflict. Mearsheimer (1990) also argued that a well managed nuclear buildup and MAD is the only remedy for the maintenance of peace among adversaries," although he expressed doubts regarding the likelihood of such a proliferation. In relation to the rationality of leaders in Third World countries, or any other small state, Harkabi (1983) stressed that nuclear war for small states means holocaust and the end of their being. Therefore, in a nuclear environment, small states might even be more careful in the use of the bomb than large states, who may sacrifice some zones in a limited strategic war.

The literature introduces theories of tacit cooperation and conflict reduction among hostile actors. Schelling and Halperin (1985) respecified the notion of arms control as a "means of supplementing unilateral military strategy by some kind of collaboration with the countries that are potential enemies" (1985, 142). Since tradition is against collaboration with enemies, they argued, arms control is actually an effort to introduce governments to the new role of force in the modern nuclear world.

⁸ Mearsheimer refers to the post cold war era in Europe.

Arms control emphasizes elements of national interest in the avoidance of war that neither side wants, of minimizing the costs and risks of the arms competition, and in curtailing the scope and violence of war in the event it occurs (Schelling and Halperin 1985, 1).

This concept allows the analysis of SNPs to recognize mutual interests, and to define the possibility of cooperation between opponents, while yielding informal, less institutionalized, and tacit understandings and agreements.

Axelrod's Tit-for-Tat strategy (1984), derived from game theory, dealt with the evolution of cooperation in an anarchical system. While leaning on the notion of reciprocity, Axelrod developed a theory of conditions for cooperation among units with self-interest. It seems that such cooperation is not due to a desire for disarmament, but to a response to mutual needs for arms control, and to internal political needs. Osgood's Graduated Reciprocation In Tension-reduction--GRIT theory (1967) suggests that unilateral initiatives can lead to graduated and reciprocal reduction in tension. The focus is on one state taking the initiative, not by creating threats and tensions, but by reducing and controlling them. Osgood expected that such an initiative will be reciprocated by others, with tension gradually reduced, and the probability of conflict or war lessened. Similar possibilities for cooperation are analyzed by Keohane

reduced, and the probability of conflict or war lessened. Similar possibilities for cooperation are analyzed by Keohane (1984).

George (1983) analyzed American-Soviet relations and concluded that in times of crisis they have better chances to improve relations than in regular times. Through a series of crises, and their management, the superpowers developed procedures for cooperation in the interest of crisis prevention. And it was merely the worst crisis--the Cuban Missile Crisis--that contributed the most to a significant improvement in the superpowers' relationships. "The shared experience of being on the brink of a possibly disastrous war aroused strong incentives to reexamine the past attitudes and policies that had led to the dangerous crisis" (George 1988, 223). This study examines and respecifies the applicability of concepts of accommodation and cooperation to the context of regional conflicts with nuclear dimension.

To sum up, there are two main trends in the literature concerning nuclear proliferation. The majority stood against horizontal nuclear spread and emphasizes the inability of SNPs to follow the example of the superpowers. Others claimed that the actual presence of nuclear weapons and knowledge of their enormous destructive power might produce stable situations through arms control and cooperation. The literature, nevertheless, paid most attention to the technical aspects of the nuclearization process, and therefore omitted the political developments and consequences of nuclearization

among SNPs. Since the process of nuclearization is now taking place in countries which are involved in long lived conflicts, it seems appropriate to tackle the possible outcomes of such a process in different regions. This analysis attempts to fill this narrow gap in the literature, by investigating the ability of SNPs to control and manage the introduction of nuclear arms into their conflict-prone regions. An essential question for research is whether there is any similarity to the experience of the superpowers, and whether cooperation is likely to lead to moderation of conflicts. It attempts to explore the regional context for nuclear strategic balance, effective deterrence, balance of terror and balance of prudence, and through tacit bargaining and coordination of expectations (Schelling 1966) toward arms control and moderation of conflict.

The basic assumption of this analysis is that nuclear arms are qualitatively different from all other types of weapons. Nuclear weapons are not just another device to increase the military power of its bearer, in the way a new jet fighter or missile is. Rather, they are terror weapons leading to deterrence and skillful non-use (Brodie 1973). They restrain the use of force by the aggressor as well as by the deterrer.

The theoretical framework for this research is realist in nature. States are self-help actors in an anarchical order; political behavior and national interest are basically necessitated over time, and powers value in particular

military capability (Morgenthau 1968; Waltz 1979). The realist perspective yields the ensign of existential deterrence, nuclear consciousness, and military cooperation (Brodie 1966 and 1973; Harkabi 1983).

V. Research Design

The empirical research aims at case study analysis of the influence of nuclearization on regional conflicts. Using 'nuclear deterrence' as a key concept in research, it will focus upon states with nuclear potential which are involved in severe regional conflicts. Two regions in which nuclearization has been evidenced are of interest for this study.⁹ In the Middle East, Israel currently enjoys a monopoly on nuclear capability, yet nuclear potential exists in other Middle Eastern countries, such as Iran,¹⁰ Iraq and Egypt. Other Arab actors possess chemical and biological weapons (CBWs), and many states have efficient missiles. The Arab-Israeli conflict has been punctuated by periodic wars, in which the broad use of force affected most regional politics and events. This territorial and religious dispute stands at the core of many other regional conflicts. Thus, it seems appropriate not to concentrate on any particular Arab state as the dyadic partner of Israel, but instead to focus upon any Arab coalition, or even a broader Muslim alliance, as referred to by the notion 'The Islamic bomb' (Krosney 1981). In South Asia, India and Pakistan already have nuclear capability, with

⁹ Nuclearization in South America has taken place in Brazil and in Argentina. Yet, this case was left out because of the lack of a severe conflict between the two. These states started going nuclear while being ruled by rightist-nationalist military regimes. The rivalry was merely a quest for prestige.

¹⁰ Iran is not an Arab country but it is considered here for being radical Muslim state, with influence and aspirations in the region.

capability, with long lived tension and acute disputes between them. This conflict has recently demarcated a clear nuclear dimension.

The research distinguishes between two empirical questions: 1. What is the extent of nuclear development in terms of potential nuclear capability: nuclear reactors, devices, tests, uranium, and so forth. The sources to be used for this task are U.N. official reports, such as the IAEA bulletin and Reports to the Secretary General, Carnegie Endowment for International Peace data and publications, U.S. Arms Control and Disarmament Agency's publications, SIPRI - Stockholm International Peace Research Institute data, and Congressional Research Service reports.

2. Is nuclear development accompanied by nuclear consciousness? Is the level of awareness mutually generated in both sides of a regional conflict? And, is it analogous to the superpowers' level? The emergence of nuclear consciousness and awareness is crucial for the success of any nuclear deterrence strategy. One way to employ public sources for this task is to examine expressions of leaders over a period of time (Evron 1976), or the change in policy goals regarding the adversary (for example, Arab leaders have relatively neglected the expression of total annihilation of the state of Israel, as early as late 1960's. This could be a result of the Arab defeat in 1967 war, but also a consequence of Israel's flourishing nuclear program during these years). Yet, as a result of the tight secrecy in regard to this issue

and the ambiguity it is surrounded with, the data to be used are limited to public sources. Given this major obstacle, primary sources in the form of biographies, press interviews, official papers and speeches, will be employed. Finally, the reexamination of secondary sources, e.g., literature on proliferation, would provide some evidence and trends of nuclear proliferation.

The next chapter includes the theoretical and conceptual respecification which are relevant for the study's aims. It is followed by the analysis of three cases. First, the experience of the superpowers is examined. Second, nuclearization in the Middle East is studied in detail, setting the framework for regional research. Finally, the case of South Asia is studied.

The case studies will be arranged in a format of conceptual layers, so that it will allow for comparison. The layers are:

1. Nuclear development and capability.
2. Attempts for second strike capability and stability.
3. Regional deterrence and nuclear consciousness.
4. Accommodation and cooperation.

Based on the analysis of the aforementioned cases, including the experience of the superpowers, it is argued that the introduction of nuclearization into conflictive regions is likely to lead to mutual nuclear deterrence, and lead belligerent actors to accommodation and cooperation, hence to moderation of conflict.

CHAPTER 2

THEORETICAL & CONCEPTUAL RESPECIFICATION

The theory of deterrence and related concepts are derived largely from the experience and dilemmas of the superpowers. In order to use them for the analysis of SNP, a respecification of the relevant theories and concepts is required. This study reviews the main aspects of nuclearization and deterrence, and suggests definitions suitable for the regional context.

I. The Realist Approach

The realist¹¹ approach set the theoretical framework for this study. Realism, in the field of international relations, considers the world as one system, hence emphasizes the structure of the system and the distribution of capabilities¹² among the actors of the system. The structure--the way units stands in relation to each other within the system--is a set of constraining conditions which determines the arrangement of

¹¹ By realist I include both classic realists, such as Morgenthau and Herz, and neo-realists - Waltz, Gilpin, and Keohane.

¹² The neo-realists prefer this notion over 'power'.

units and serves as a selector for status and behavior of these units (Waltz 1979).

The basic elements of decentralization and anarchy in the international system of states (the basic units) encourage a self-help behavior of the units. Therefore, it is the distribution of capabilities among the units that determines the patterns of interactions among states and the upshot one may expect out of these interactions. States strive and struggle for power (Morgenthau 1968) and as they realize the relations of power, and anticipate benefits from the use of power, they are likely to use it in order to change the status quo and the system (Gilpin 1981). Realism in the nuclear age focused on the concepts of deterrence, nuclear balance of terror, and cooperation (Brodie 1966 and 1973; Harkabi 1983). These concepts are the core of this study.

II. The Qualitative Difference of Nuclear Arms

In the core of this analysis stands the assumption that nuclear arms are qualitatively different from all other kinds of weapons. Nuclear weapons are not just another bomb that increases the military power of its bearer, in the way a new jet fighter or missile does. Rather, they can eliminate the opponent at no time,

In a moment, in the twinkling of an eye, at the last trumpet. . . . This is a difference between nuclear weapons. . . [and conventional arms]. . . . It is not in the number of people they can eventually kill but in the speed with which it can be done, in the centralization of decision, in the divorce of the war from political processes, and in computerized programs that threaten to take the war out of human hands once it begins (Schelling 1966, 20).

The introduction of nuclear arms to the international arena brought about three major changes (Carnesale 1983). First, the traditional meaning of defense from enemy attacks become obsolete, mainly due to the application of 'smart' delivery systems. So far, the deadly combination of nuclear explosive device and advanced means of delivery became the 'absolute weapon'. It is not to suggest that one cannot intercept a nuclear missile or bomber, but that one has to achieve a defensive ratio of 100 percent. Any one device

which breaks through means hazardous destruction and death.

Second, the targets chosen for attack in the nuclear age are of civilian population centers, not military. Civilians and cities have suffered to a great extent during past conventional wars, but there was a shielding army and airforce to take over prior to such assaults. In the age of ballistic and cruise missiles, defence structures of any potential 'recipient' seem to be worthless, including those of the superpowers. The bearer of nuclear arms keeps the possibility of destroying the enemy's population centers before he destroy the enemy's armies.

Third, nuclear war of any sort would be of high speed and liable to be concluded (at least the elimination of main targets) in a matter of hours, if not minutes. The speed of inflicting substantial death leaves no time for diplomatic efforts, political initiatives, or error corrections (in a horrible possibility of technical malfunction). Actually, once a leader launched a nuclear attack, he would have no political control over the event.¹³

These changes, together with the development of second strike capability--the ability of the military nuclear infrastructure to absorb an incoming attack¹⁴ and then to

¹³ There are some scholars who suggest that leaders might 'shoot and rest'--pause after the initial strike--in order to allow for diplomatic efforts. Yet, the expected damage after an initial signalling strike, one may note, probably means the elimination of one or two major cities (New York, for instance) and a death ratio which was never known before. Kissinger (1961).

¹⁴ This includes a surprise attack.

retaliate in full strength--make nuclear weapons functional merely for deterrence and skillful non-use. It was due to these reasons, especially the inability to survive a nuclear war, that the prime goal of military institutions in nuclearized states has changed from winning wars to avoiding wars (Brodie 1973).

Thus, one may conclude that nuclear arms restrain the user, as well as the potential nuclearized aggressor, from the use of nuclear force.¹⁵ Moreover, nuclear arms have one significant trait. Their mere existence intensifies the responsibility of decision-making units, and eradicates any impulsive adventurism. Being near such an enormous, terrorizing and lethal weapon, induces tolerance and moderation (Gallois 1961). And both sides are encouraged to cooperate in order to avoid destruction (Jervis 1989).

¹⁵ Some argue nuclear arms restrain any use of force between nuclear belligerents, since the situation is liable to escalate to nuclear clash, and leaders are well aware of it. See, for example, Brodie (1973) chapter 9; Deitchman (1969); Harkabi (1983).

III. Deterrence

Acquiring nuclear capability is politically meaningful and pertinent when it is associated with a deterrence strategy. Deterrence, in its simplest and most rudimentary form, can be viewed as one actor's efforts to influence the behavior of another toward a desired direction, which is to keep him from certain actions (Schelling 1966; Morgan 1977). It is the deterrer's (D) threat to inflict punishment on the potential challenger (C), in order to discourage him from adopting certain courses of action. D's influence is carried into effect by threatening to inflict unacceptable costs upon C if the action is taken.

A significant distinction should be made at this point between deterrence and compellence. While the former intends to prevent an action (D sets the stage and wait), the latter aims at forcing a desired deed (D initiates an action, or committing himself to an action).

[There is a] Typical difference between a threat intended to make an adversary do something and a threat intended to keep him from starting something. The distinction is in the timing and in the initiative, in who has to make the first move, in whose initiative is put to the test. . . . The threat that compels rather than deters often requires that the punishment be administered *until* the other acts, rather than if he acts (Shelling

1966, 69-70).¹⁶

The essential aim of the deterrer, thus, is to direct the challenger to inaction, by making the potential action appear as a costly and unattractive one (Schelling 1980; Brodie 1959). This is to say that deterrence is established on the ambition of maintaining the status quo, and its prime aim is to influence the adversary's willingness to fight (Dror 1989). In essence, conflict is defined as a struggle, especially a prolonged one, results from one's dissatisfaction from the contemporary status quo (Morgenthau 1973). The deterrer intends to preserve the status quo, while the challenger seeks to change it to his favor. Obviously, deterrence is the attempt of D to influence the intentions, and consequently the behavior, of C in the course of inaction (Williams, in Baylis 1982). Deterrence does not apply only to leaders' sense of rationality, but also attempts to re-shape the perception and image of the situation in the minds of the adversary's decision makers, by involving fear of the consequences of any repulsive action (Jervis 1970).

[C] Is prevented from doing something by being made to believe that to refrain from the action is in his best interest. Deterrence. . . makes certain options or courses of actions which are available to [C], and possibly appear highly attractive and tempting, to look most unattractive.

¹⁶ The emphasis is included in the original text.

Any potential gains to be made must be outweighed by the costs which [C] believes would be inflicted upon him in the event of the specified option being chosen or the prohibited action taken (Williams, in Baylis 1982, 69).

The concept of deterrence is founded upon contingent threats, deterrent threats, which give the challenger ample encouragements to avoid certain types of behavior (Schelling 1980). Furthermore, the threat is conditional to the challenger's behavior which should expect a definite punishment in response to this action. This 'committal strategy' (Harkabi 1983) promise no retrieval from retribution.

There is a clear distinction in the literature between nuclear and conventional deterrence (Mearsheimer 1983). Although similar in nature, the different quality of weaponry vouches for distinctive conceptual approaches. While the latter emphasizes the use of force, calculations of military power, and strategies to overcome the enemy, the former is focused upon the avoidance of war. Mearsheimer (1983) argued that conventional deterrence is directly related to the military strategy - to the matter of how one nation's military is employed to achieve specific battlefield objectives. Under nuclear deterrence, the principle of strategy is to refrain from the use of armies.

A deterrent threat is convincing because of the immense

destructive power and efficient delivery systems of nuclear capability. Therefore, the incredible vulnerability of any country to nuclear arms compels its statesmen and generals to devote more thought to war prevention than to war utilization and victory (Baylis 1982).

The changing character of strategy resulting from the appearance of nuclear weapons has modified the nature of deterrence. Prior to the nuclear era, powerful states, with military superiority, were able to discourage others from attacking them by being able to repel such an attack--*deterrence by denial*. In the nuclear age, due to the qualitative difference of nuclear arms, nuclear powers discourage their opponents from attacking them not by their capability to defeat them, but rather by setting unbearable costs relative to the opponent's anticipated gains--*deterrence by punishment* (Snyder 1961). "It is the prospect of fighting the war rather than the possibility of losing it that induces restraint" (Jervis 1989, 9).

The essential factors that assure effective deterrence are communication, credibility, capability, and determination. These factors then configure the three basic balances which make deterrence work or fail: the balance of power, the balance of political interests, and the balance of determination¹⁷ (Evron 1987). Although some of the concepts treated are also relevant in a conventional environment, the following discussion emphasizes nuclear deterrence.

¹⁷ The three balances are discussed below.

A. Communication

Deterrence, by definition, necessitates the delivery of a threat, a clear announcement of its existence and margins, to the enemy (Harkabi 1983). In order to be deterred, the opponent should be aware of the threat, and the lines of the threat should be clearly and unequivocally demarcated. The clearer, more salient, and less ambiguous the line a potential aggressor must not cross, the more successful is deterrence likely to be (Schelling 1980). A state trying to deter its opponents from actions it deems undesirable, should endeavor to make as clear as possible what the prohibited actions are, as well as signifying the penalties for noncompliance with its desires (Williams, in Baylis 1982). Yet, the threat need not necessarily be explicit. There are situations where deterrence could be as effective without an explicit threat being issued. The challenger expects certain reactions to a possible behavior on his behalf, thus he is aware of precisely what lines of action he should refrain from taking. Schelling (1980) refers to this view as 'tacit agreement'--an agreement reached without being openly expressed.

The communication factor bears some problematic aspects. The most prominent of all is the obstacle of misperceptions (Jervis 1976) and biased images (Stein, in Jervis 1985), which interfere with and prevent proper calculations and understanding of reality. The concept of misperception refers to false comprehension of others' actions and intentions. It results from leaders' tendency to fit incoming information

into their existing theories and images (Jervis 1968). Psychologically biased images are ways of treating information that diverge from standard definitions of rationality, and they can be either motivated or unmotivated biases (Jervis 1985). Decision makers perceive and calculate the situation in accordance with their cognitive or unmotivated biases. These biases are products of both the domestic and the international political environment, on the one hand, and the inherent limitation of human cognitive capabilities, on the other. The result of these biases is a variety of systematic errors and misperceptions. Decision makers' motivated biases arise from emotions generated by conflicts that personal needs and severe situational dilemmas pose. As they seek to judge whether others are a threat, statesmen are subjected to both motivated and unmotivated biases.

The resulting biases systematically affect deterrence and perceptions of threat. Accordingly, one actor's decision to attack should include a prediction of other actors' retaliation on his values. Therefore, the actor must develop an image of the others and their intentions. However, such an image is liable to be shown, post facto, as an insufficient and distorted one (Jervis 1968). During an international conflict, it becomes apparent that the participants rarely have a good understanding of each other's perspectives, goals or specific actions.

Signals that seem clear to the sender are missed or misinterpreted by the receiver; actions

meant to convey one impression often leave quite a different one; attempts to deter often enrage, and attempts to show calm strength may appear as weakness (Jervis 1985, 1).

Another disturbance to clear communication is the fact that decision making units are fractionated entities, with profound differences among its members (Allison 1971). The difficulty lies in the possibility of series of bureaucratic maneuvers, in which a variety of diverse messages emanates from the deterrer's unit, or so understood by the challenger's government (Halperin 1974). Hence, for the sake of reliable communication, the sender should be clear and specific in his threats and intentions, whereas the recipient strives to process the incoming message as accurately as possible, and to avoid misperceptions and organizational barriers.

The outcome of the intellectual discussion on deterrent communication is the advice to convey clear intentions and threats in order to overcome the aforementioned obstacles. Yet, it seems that there is one vital interest shared by all states, and comprehended by them, and is therefore likely to be transmitted and perceived clearly in relations of deterrence. *This is the state's vital interest of survival and defending its integrity by all means necessary for this task.* No clear and loud communication is required for the deterrer to get his message across, and no great sophistication is needed by the challenger correctly to

perceive this message. If only feasible, all states are ready to sacrifice all available means for their self-preservation as political units. Considering other vital interests, it seems that the more vital the interest for one state, the more likely it is for its opponent to be aware of this fact (Schelling 1966). In addition, sophisticated technological means of communication may offer a remedy to a great deal of misperceptions and biases, especially in a nuclear environment, where it is in the interest of both the deterrer and the challenger to refrain from any possible 'noise' in their communication processes. In the nuclear age, the price of any action that results from biased conception of the situation is too high to allow for misperceptions. Thus, the focal point is the 'vitalness' of the political interest, defined as interests that a country is ready to go to war to defend (Brodie 1973).

B. Credibility

The theory of deterrence considers credibility as an indispensable precondition for efficacy. A threat must be credible. The deterred party must believe, and be totally convinced, that the deterrer will not hesitate to implement the threat. Deterrence will be deficient if the challenger presumes that the deterrer would be reluctant to carry out the punishment, and would retreat, or if he estimates that the deterrer lacks the capability to execute the punishment (Harkabi 1983). An efficient deterrence must make any potential aggressor aware not only that the costs of taking prohibited action could exceed the gains to be made, but also that they would do so (Williams, in Baylis 1982). There are two integral key factors that help to develop credibility. Harkabi (1983) referred to them as the 'psychological and rational factors of judgement'. The psychological factor relates to fear, and the rational factor describes calculations based upon the evaluation of the deterrer's capability and determination. The two elements of judgement support and influence each other in every part of the decision making process, with regard to taking or avoiding the prohibited action. Therefore, one cannot be fully expected to grasp and explain deterrence and its components in terms of a sole factor. It is the special combination, and the subjective relative function, of the psychological and rational factors that assures the message is crossing over. Deterrence would attain its objective if, and only if, the

rational factor supports, and is supported by, the factor of fear (Harkabi 1983). Once the threat is issued and received, the challenger is seized with great fear -- fear of punishment by nuclear weapons. It is only after the initial reaction of fear that the actor considers the true value of the threat, and initiates calculations of capability and determination. He will question himself whether the deterrer has the capability to execute the punishment successfully, and how determined is the deterrer to carry his commitment. It is not always enough for the deterrer to have the capability, for strong determination is needed too. It is to these two questions, capability and determination, that attention should be given now.

C. Capability

Capability is the capacity of the deterrer to execute threats and to impose upon the potential aggressor unacceptable costs relative to any anticipated gains he perceives. When dealing with nuclear deterrence posture, "[It] Must aim to ensure that the threatened costs are sufficiently high to convince a potential challenger that action would not be worthwhile" (Williams, in Baylis 1982). Capability has four major components: nuclear weaponry (actual or potential), delivery systems, survivability of nuclear weaponry, and invulnerability of command, control, communication and intelligence (C'I) systems (Evron 1987).

1. Nuclear weaponry

Nuclear weaponry means the possession of the bomb, now or in the forthcoming future.¹⁸ It is basically a technical consideration of the nuclear capability of a state, with some distinctions made between the type of weapons, and its availability for actual use - warhead, bomb, device, a 'bomb in the basement', option, and engineering know-how.

2. Delivery systems - It is not sufficient to acquire nuclear weaponry of any sort without appropriate means to deliver them to their targets. A buildup of nuclear arms should be accompanied by the development of such means, whether they are

¹⁸ See discussion on futuristic capability in the first chapter, under 'nuclearization'. Also see Schelling (1976).

missiles, canons, aircraft, submarines or any other suitable vessel.¹⁹ An important prerequisite for the development of such systems is that the adversary would not be able to intercept them before they reach their targets (Harkabi 1983).

3. Survivability of weaponry: Second strike capability

For maximum efficacy, the nuclear weaponry should survive all kinds of attack, preemptive and preventive alike. Else, the opponent would be tempted to strike and eliminate the nuclear arsenal, and remove the threat of retaliation. Feldman (1983) discussed survivability and argued that nuclear deterrent forces with enormous destructive power, while being vulnerable, are not only less deterring but also attracting a disarming strike. Similar concerns were expressed by Wohlstetter (1959). The demand for survivability of nuclear arms had stimulated the development of *second strike capability*.

The literature on deterrence distinguishes *first strike* from *second strike capability*. Freedman explained the difference between the two categories, suggested by the RAND corporation:

A first strike was taken to refer to a strike that was not only the opening volley of a nuclear war, but was also directed against the nuclear

¹⁹ For a nearby target, a primitive delivery vehicle will do.

capability of the enemy, with the intention of crippling his means of retaliation. A second strike force was one capable of ensuring effective retaliation even after absorbing an enemy first strike (Freedman 1982, 135).

Accordingly, first strike forces, large and strong as they could be, would not effectively deter unless they are accompanied by suitable arrangements of survivability. There are several methods to attain survivability: variation in delivery systems; quantity of weapons; mobility; hardening (silos); alertness; dispersion and spreading; concealment and secrecy (Feldman 1983; Harkabi 1983). The invulnerability of nuclear weapons is not certain. Their survivability is determined by the efforts that the belligerents invest in protecting their weapons versus developing accurate systems to disable the opponents' arsenal. Nevertheless, the improvements in weapons survivability is one of the central reasons for effective and stable deterrence (Brodie 1966).

4. Invulnerability of (C³I) systems - The term C³I (CCCI) stands for Command, Control, Communication and Intelligence systems. It refers to the means by which leaders use their strategic nuclear forces. Such systems normally include: sensors to detect an incoming attack, command centers to evaluate the information, a rank of decision makers authorized to order the use of nuclear weapons, communication networks

connecting these elements and the strategic nuclear forces, and intelligence resources to gather, analyze, and communicate information on the status of the adversary's war-making capability. The invulnerability of C'I systems is vital for the confirmation that all parts of the strategic 'machinery' are under control, and operational when needed. Otherwise, there would be a great temptation to the adversary to strike first, paralyze the retaliation force, and harm its volume and accuracy (Harkabi 1983).

D. Determination

A fundamental factor associated with capability is the notion of determination. It was previously stated that once a threat is issued, and received, a challenger is seized with great fear of nuclear retaliation. It is only after the first reaction of fear that the actor considers the true value of the threat, and calculates capability and determination. He questions himself whether the deterrer has the capability to execute the punishment successfully, and at what level is the deterrer determined to fulfill his commitment. How serious is the threat, in terms of the deterrer's willingness, determination, and courage to implement it? Determination is affected by both the salience of the issue to the deterrer, and the decisiveness he shows. Schelling (1966) referred to determination as the 'art of commitment'. He emphasized the willingness to pay a high price in order to reach certain vital political goals and defend credibility and prestige. The challenger has to calculate the utility and harm of his act, and evaluates the importance of the issue for the deterrer and his intentions (Snyder 1961).

E. Political Balances

The success or failure of deterrence posture depends to a great extent on compound political factors as well as on the aforementioned elements of deterrence. The theory of deterrence grants extra importance to the credibility of the threat in determining the success of deterrence. Yet, the failure or success of deterrence is conditioned by the three balances of military capability, interests and determination, the interactions among them, and both sides' perceptions of these three balances. The process of deterrence is a combination of two parallel sets of calculations: that of the deterrer and that of the challenger.

1. *Balance of military capability* - the assessment of the relative military capabilities and the level of nuclear development of both sides, and their respective perceptions of this balance. Usually, a challenger aspires to gain superiority of military capability in relation to the deterrer, before he initiates an action.²⁰ The deterrer, on his behalf, strives to confirm his military advantage, and to prevent his adversary from matching the balance. In mutual deterrence, under mutual assured destruction, calculations of military capability are marginal. The ability to inflict an unacceptable destruction to the other side is assured and invulnerable, and beyond a certain point (the point that

²⁰ Although there are some unusual historical cases, where the challenger attacked from inferiority, e.g., Egypt and Syria, 1973.

grants the belligerents with MAD) cumulative arms races are null.²¹

2. *Balance of interests* - the significance of the issue at stake in the eyes of the actor, and the importance of the issue to his adversary. The value of interests stems from both political and strategic considerations. The centrality of the balance of political interests was widely discussed by George (1974), Russett (1963), and Maxwell (1968). Under mutual deterrence, this balance reaches a certain point of equilibrium, since both sides would pay careful attention to the opponent's political needs and to his vital interests, especially the ambition of survival and political integrity.

The higher the value a state places on prevailing on an issue, the higher the risks it will be willing to run in order to do so. Thus, a side that has more of a stake in an issue can make more credible threats to stand firm. [A challenger of the status quo] needs to show. . . that what it had been able to live with before, now has become impossibly painful (Jervis 1989, 30-31).

3. *Balance of determination* - the evaluation of the opponent's readiness to bear the cost involved in defending his interests. This balance supports the balance of interests, and is assessed in light of the costs of nuclear

²¹ Yet, the experience of the superpowers demonstrates that some elements, like the military institutions, still encourage arms races, both nuclear and conventional.

war which certainly exceed any gains anyone could hope to make thereby²² (Williams, in Baylis 1982).

To sum up, the theory of deterrence stands at the core of nuclear relations in the international system. Early strategists assumed that deterrence requires rationality of leaders, but later analysts demonstrated that some psychological factors, fear in particular, are central to the employment of effective deterrence. Since in general, leaders are not known to be suicidal, these psychological motives help to enhance deterrence among 'sensible leaders' (Jervis 1989). All calculations made in deterrence involve some subjective aspects, when each side has to evaluate the other's capability, survivability, intentions, determination, and so forth. Therefore, there is always room for some doubts, some uncertainty regarding the situation and its consequences. These reservations, which support deterrence, were entitled 'deterrence through uncertainty' (Kissinger 1961). The vague circumstances dishearten both sides, whereas doubts intimidate the potential aggressor (Harkabi 1983). Effective deterrence is obtained not only by rational calculations of cost-utility, but also through essential uncertainty in the nuclear environment, together with the threat of severe punishment.

Under mutual deterrence and MAD, nuclear retaliation means bringing about a self-destruction. Therefore, this threat is credible mostly against an adversary's effort to annihilate the deterrer as a state, when there is no other way

²² See discussion below, 'The Corollary of Deterrence'.

out--the 'Samson Option' (Hersh 1991).

The interest of this study lies upon mutual deterrence between belligerent dyads. The implications of mutual deterrence are many and far-reaching. Therefore it seems appropriate, at this stage, to pay attention to the five direct consequences of such deterrent relationships: balance of terror, stability, nuclear consciousness, nuclear threshold, and cooperation.

²³ Samson had preferred to bring down the temple and kill himself with his enemies--"let my soul die with the Philistines."

IV. The corollary of deterrence

"Nuclear weapons have not guaranteed peace; they have only made it more necessary" (Carnesale 1983, 44).

When dyadic adversaries enjoy a certain level of nuclear capability and retain an effective mutual deterrence, a balance of terror is a highly presumable outcome. In the nuclear era, mutual deterrence exists between the two superpowers.²⁴ The objective of mutual deterrence is to maintain the status quo. The incredible capability to inflict destruction set stability in the relations of the superpowers. The stability stemmed from the balance of terror, a by-product of the capability to inflict an unbearable destruction under all circumstances--*Mutual Assured Destruction* (MAD) (McNamara 1968). The formation of psychological perceptions in the minds of decision makers regarding the potential effect of any use of nuclear weapons, together with the awareness of the horrifying expected consequences of such a use, advance the development of nuclear consciousness among statesmen. Furthermore, the presence of the *nuclear threshold*--the psychological dividing line between the use and non-use of nuclear weapons--inhibits the resort to force, strengthens stability and contributes to the prevention of nuclear

²⁴ Despite the demise of the U.S.S.R., it is appropriate to refer to the U.S.A. and Russia as two nuclear superpowers. Russia has a nuclear capability of a superpower and it strives to gain a superpower's status.

holocaust.

All these conceptual stages in the theoretical framework of deterrence influence the belligerents to seek accommodation and cooperation, most probably methods of arms control. The outcome of the process is a moderation of rivalries and disputes (George 1988). It seems that the only alternative to the suggested theoretical progression is a nuclear catastrophe, where both sides would be among the losers.

A. Balance of Terror

Balance of terror, as a concept, is a primal consequence of mutual deterrence. It refers to the psychological effect of MAD and stems from both sides' awareness of nuclear deterrence and the probable aftermath in case it fails. The high vulnerability, on the one hand, together with having the capacity to ride out a first attack and to inflict unbearable retaliatory destruction (Wohlstetter 1959), on the other, terrorizes the belligerents. To be more accurate, it is the mutual assured capability to destroy the population while simultaneously being unable to demolish the opponent's retaliatory forces (Harkabi 1983) that creates the balance of terror.

The balance of terror, in a state of mutual deterrence, strikes fear and horror into decision makers. When they consider violent actions, it encourages inaction and moderation over hostility. In its special way, it precludes

nuclear war (some argue any war)²⁵ from the agenda, and induces the establishment of nuclear stalemate--*Pax Atomica* (nuclear peace). Thus, the essence of peace is changed from good will and pacifism, to peace based upon technology, violence, terror, and mutual interest of avoiding holocaust--the balance of prudence (Schelling 1966). "Successfully stabilized deterrence. . . might better be described as an effort to replace the 'balance of fear' with a 'balance of prudence'" (Schelling and Halperin 1985). Brodie (1973), too, perceives the balance of terror, caused by the presence of huge stockpiles of nuclear weapons in the hands of nuclear powers, as the great equalizer that convinced both sides to avoid wars--not nuclear wars but all wars.

B. Stability

The concept of stability in a nuclear deterrence system, one of the key concepts in strategic thought, refers to a circumstances that encourage the opponents to preserve the status quo and prevent war. Under mutual deterrence, the initiator of nuclear attack would not be rewarded, and the retaliator could not be damaged so severely that he is unable to inflict unacceptable punishment on the aggressor (Harkabi 1983). Hence, one cannot gain much from a preemptive (first) strike, definitely not disarming the deterrer. The notion of superiority becomes irrelevant, and so does the use of massive

²⁵ For example, Schelling (1966); Brodie (1973); Waltz (1981).

force.

An additional component of stability is the awareness of both sides of the balance of terror. This is not to say that stability means equal capacity to destroy each other, but rather, mutual capacity to inflict unbearable destruction under all circumstances. The choice the belligerents meet in the nuclear age is *co-existence* versus *co-annihilation*. Moreover, the mere existence of balance of terror, due to mutual second strike capability, forces stability to become the prime interest of both sides. The rivals are turning to be 'allies' against war, with an identical interest--to avoid an all-out war (Aron 1968).

The notion of stability is very helpful in determining the behavior of states in times of crisis, when there is ambiguity in regard to the real situation.

If both sides have weapons that need not go first to avoid their own destruction, so that neither side can gain great advantage in jumping the gun and each is aware that the other cannot, it will be a good deal harder to get a war started. Both sides can afford the rule: When in doubt, wait (Schelling 1966, 246).

C. Nuclear consciousness

One of the necessary sequels of the balance of terror is the encouragement of nuclear consciousness and sensitivity to costs. The introduction of nuclear arms into the

international system, the superpowers' relations in particular, has forced on the dominant actors a vital common bond--survival. "The nuclear threat creates a solidarity of interest between the two superpowers--against a total war in which they would be the greatest victims" (Allison, Carnesale, Nye 1985). Leaders in a deterrence system have realized that preempting or initiating nuclear attack could be committing suicide for their own countries (Carnesale 1983). The price of nuclear exchange was set to be so high, and the awareness of the balance of terror and nuclear threshold so definite, that rivals as well as bitter enemies would resort to any means short of war, including arms control and cooperation. *This is not to say that nuclear war is impossible but that it is unlikely and implausible.*

When leaders are exposed for the first time to nuclear capability, either their own or that of the enemy, they tend to perceive it in conventional patterns of thinking (Freedman 1983). The introduction of nuclear arms to the superpowers' arsenals was followed by attempts to include them in classic (conventional) deterrence posture, and to evaluate their military use--'massive retaliation' and 'flexible response' during 1945-1964 (Cohen 1987). Leaders of the superpowers had developed nuclear consciousness, yet it took them two decades to perceive the inherent non-usability of nuclear weapons, and to exclude them from military use by adopting MAD, in 1965.²⁶

²⁶ Nevertheless, some scholars still believe in 'escalation dominance' and 'prevailing' during nuclear war.

In the base of MAD there is the assumption of mutual nuclear awareness and consciousness. Both sides, after perceiving the nuclear reality of balance of terror, have to abandon ideas of winning first strikes, and to substitute military options with agreements about equality and arms control (Cohen 1987). Therefore, after some time elapses, the understanding and perception of the different qualitative value of nuclear arms penetrate their minds. Whether due to fear and terror, or due to education and socialization, decision makers are liable to comprehend the meaning of nuclear deterrence, to modify their state's policy and behavior, and to adopt the relevant perceptions regarding the use of force in the nuclear era. This gradual sequence, which is an important factor in 'nuclear maturity', is referred to in this study as 'nuclear consciousness'. It is even helpful in situations where one belligerent is ahead in the nuclear arms race, while his opponent still thinks 'conventionally', and lacks the typical consciousness that comes from the existential predicament.

The best illustration of nuclear consciousness is the 'crystal ball effect' (Carnesale 1983). The comprehension of nuclear reality, especially its horrifying effects in war, equips leaders with the equivalent of a crystal ball, showing them the devastation at the end (a matter of few hours) of a major war.

Statesmen in the nuclear age can envision the destruction of a full-scale nuclear war and it makes them determined to avoid it. Crises still

occur, but when the statesmen of the nuclear age have gazed into the nuclear crystal ball they have. . . prudently retreated from the ultimate confrontation (Carnesale 1983, 44).

In this study, nuclear consciousness is discerned and assessed in four ways. First, nuclear consciousness is logically inferred from the existential effect of nuclearization whose objective is to have an option to develop weapons of mass destruction. Second, the diffusion of strategic doctrine based on nuclear weapons penetrated, first, the Soviet Union during the late 1950s and early 1960s, and gradually, among intellectuals around the world for more than three decades. Hence, leaders from different continents speak and think in terms of the logic of deterrence. Third, universal arms control central treaties use terminology that suggests recognition that something universal has emerged--supreme interest in avoiding nuclear war (Bargman 1977). The presence of the term 'supreme interest' in treaties²⁷ to which regional powers are parties is evidence of their nuclear consciousness. Fourth, Nuclear consciousness may be noticed by examining statements of political leaders of SNPs.

D. Nuclear threshold

When leaders consider war in a nuclear environment, there

²⁷ Such as the Treaty Banning Nuclear Weapons Tests in Outer Space and the Non Proliferation Treaty (Bargman 1977).

is a clear and hard-to-cross psychological breakpoint. The most prominent one is the dividing line between the nuclear use and non-use. "Once war has started, no other line of demarcation is at once so clear, so sanctified by convention, so ratified by emotion. . . so easily defined and understood as the line between not using and using nuclear weapons" (Kahn 1965, 95). The balance of terror stimulates the appearance of this threshold in the mind of decision makers. The dominance of the nuclear threshold results in leaders' awareness of the enormous destructive power of nuclear arms. Thus, it would make leaders prefer to exhaust any method available in order to conclude crises by means other than the use of force (George 1983).

It seems to be qualitatively different for a leader to send his troops to the battlefield, than it is to choose the non-retrievable nuclear path. It is an all new status of deciding on mutual annihilation. The prominent centrality of the nuclear threshold encourages leaders to exhaust any method available, in order to conclude crises by means lesser than the use of force (Schelling 1966). Furthermore, the nuclear threshold reinforces the mutual interest of rejecting the use of nuclear weapons as far as possible, and to resort to methods of arms control (Schelling and Halperin 1985).

This is the 'supreme interest' that the possessor of nuclear weapons become aware of. "All people and governments have a supreme interest in the avoidance of nuclear war" (Bargman 1977, 132).

The two trends--avoiding conflicts which are liable to escalate to armed clashes and exhausting all possibilities before resorting to war--are supported by tacit bargaining, regimes of crisis management, and methods of crises prevention (George 1983 and 1988; Schelling and Halperin 1985). The preservation and continuity of these two trends seems to be a supreme interest of any nuclear actor, in any system of mutual deterrence. The nuclear threshold would be a strong obstacle to cross for any leader, assuming that the probability of unpremeditated war is infinitesimal (Harkabi 1983).

The nuclear threshold is enhanced by the nature of deterrence. As stated earlier, the concept of nuclear deterrence statesmen have in mind is concerned with a 'skillful non-use' (Schelling 1966) of nuclear weapons. Hence when vital interests are challenged, the supreme interest in avoiding nuclear disaster remains central to the decision making process. Leaders might take risks in order to achieve or protect their national interests. Simultaneously they will try to avoid escalating toward a nuclear use. One may assume that the exception to this rule is the inherent interest of all states--self-preservation (Waltz 1979).

It is not suggested here that miscalculation and the use of nuclear weapons in the future is impossible. Many processes of escalation, such as the 'game of chicken' or 'brinkmanship', might bring about a crossing of the nuclear threshold. In a typical situation of escalation, there is likely to be a competition of risk taking. However, one may

assume that in such a situation the goal will be to facilitate negotiations.²⁹

If either side wanted a war, it would simply go to war and not bother to negotiate. . . . [Nevertheless] neither side is willing to back down, precisely because it believes or hopes it can achieve its objectives without war. It may be willing to run some risk of war in order to achieve its objectives but it feels that the other side will back down or compromise before the risk becomes very large (Kahn 1965, 12).

Schelling stresses the important role of nuclear threshold, and argues that in most cases decision makers properly perceive the terrorizing effect of nuclear arms. After nuclearization,

The danger of general war will rise strikingly. Both sides will be conscious of this increased danger. [After the first use of nuclear arms] it is not the same war any longer. The tactical objectives and considerations that governed the original war are not longer controlling. It is now a war of nuclear bargaining and demonstration (Schelling 1966, 110).

The nuclear threshold, and the existential characteristic

²⁹ This assumption also includes fanatic regimes.

of deterrence, have a "sobering effect" (Gaddis 1986) upon statesmen, especially in cases in which misperception and miscalculation are likely. Leaders may misperceive intentions of each other but it is hard for them to misperceive each other's nuclear *capability*.

Nuclear weapons, as stated earlier, are not 'just another weapon'. Since the beginning of the nuclear era, statesmen were determined in distinguishing between nuclear and non-nuclear weapons. It was associated with a deep fear of, and antagonism to, nuclear arms. The consequence was a growing significance of the threshold of using versus avoiding nuclear arms (Brodie 1966). To illustrate this subject, Brodie resorts to the Cuban missile crisis, and argues that the psychological nuclear threshold was responsible for the Soviets' retreat from Cuba.

It would otherwise be difficult to explain why the Russian yielded so quickly and completely in the Cuban crisis of October 1962. They obviously feared to let a situation develop where one of our destroyers might so much as fire a shot over the bows of one of their transport ships. They clearly wanted no fighting at all, apparently because they felt that any fighting was extremely dangerous (Brodie 1966, 109).

Whiting (1960), using the same assumptions, argued that the Chinese decision to enter the Korean War was encouraged by

the U.S. non-use of nuclear weapons. The validity of the nuclear threshold among American decision makers helped to induce Chinese intervene. Bargman (1977) stated that nuclear threshold, as reflected in the superpowers' supreme interest, was responsible for the successful management of both the Cuban Missile Crisis, 1962, and the Middle East war of 1973.

To conclude, it seems that both sides are willing to accept substantial costs before passing the nuclear threshold. When the threat, or the vital interest at stake, is short of survival and the integrity of the homeland, leaders would resort to any means short of the use of war, and even cooperate with the enemy, in order to manage crises which are liable to escalate to war and nuclear exchange (George 1983). The main reason for this behavior is the prospect of nuclear war, which is so terrifying as to frighten policy makers into conducting crises more responsibly (Lebow 1981). The key point is that this consciousness is now universal, affecting calculations of all states.

V. Arms Control and Cooperation Under Anarchy

The underlying assumption of the theory of mutual deterrence is that both sides have to cooperate in order to avoid destruction (Jervis 1989). Cooperation refers to awareness of the opponents of their mutual supreme interest, the one which requires a tacit or calculated collaboration (Schelling and Halperin 1985). Cooperation is applied not to solve conflicts, but to reduce tensions and risks of nuclear holocaust (George 1988; Axelrod 1984; Oye 1986). Hence, actors adjust their behavior to the actual or anticipated preferences of others. They cooperate in order to enhance self-security, not to appease the opponent (Axelrod and Keohane, in Oye 1986).

Morgenthau (1973) suggested an important distinction between tensions and disputes among conflicting actors. When the adversaries have conflicting demands about a specific issue, demands which can be clearly stated and formulated in legal terms, such as territorial claims, they are involved in a dispute. Yet, at the bottom of disputes, there are tensions--unformulated conflicts of power and ideology. Arms control measures in effect deal with nuclear disputes. Treaties are agreed upon in regard to specific issues, e. g., testing and proliferation. Cumulatively they can reduce underlying tensions stemming from the arms race. But nuclear disputes can arise outside the framework of arms control, such

as that of Cuba 1962, over the dissemination of nuclear weapons under Soviet control. This had the propensity to escalate to a nuclear crisis because it was inseparable from the fundamental tension, with a sudden change in the balance of deterrence (Bargman 1977).

The conceptual and technical stages of deterrence induce nuclear belligerents to seek stability through accommodation and cooperation, most probably through methods of arms control. The outcome of the process is a possible moderation of rivalries and disputes (George 1988). It seems that the only alternative to the suggested theoretical progression is nuclear catastrophe, where both sides would be among the losers. Leaders in a deterrence system have realized that preempting or initiating nuclear attack could mean committing suicide for their own countries (Carnesale 1983). The price of nuclear exchange is set to be so high, and the awareness of the balance of terror and nuclear threshold so definite, that rivals as well as bitter enemies would resort to any tool short of war, including arms control and cooperation. Nuclear actors put their trust in *diplomacy*²⁹--the determined but careful implementation of foreign policy--and learn how to conduct their relations and achieve their national goals under the new nuclear terms. The dominant precondition for the conduct of diplomacy in the nuclear age is relaxation and reduction of conflicts among states, conflicts which are liable to end in nuclear holocaust. The way of achieving this

²⁹ In Morgenthau's (1973) terms.

precondition is *peace through accommodation*, its tool is diplomacy (Morgenthau 1973).

The literature introduces theories of tacit cooperation and conflict reduction among hostile actors. Schelling and Halperin (1985) respecify the notion of arms control as "means of supplementing unilateral military strategy by some kind of collaboration with the countries that are potential enemies" (1985, 142). Since tradition is against collaboration with enemies, they argue, arms control is actually an effort to introduce governments to the new role of force in the modern nuclear world.

Arms control emphasizes elements of national interest in the avoidance of war that neither side wants, of minimizing the costs and risks of the arms competition, and in curtailing the scope and violence of war in the event it occurs (Schelling and Halperin 1985, 1).

Axelrod's tit-for-tat strategy (1984) dealt with the evolution of cooperation in an anarchical system. While leaning on the notion of reciprocity, Axelrod developed a theory of conditions for cooperation among units with self-interest. It seems that such cooperation does not stem from a desire for disarmament, but to a response to mutual needs for arms control, and to internal political needs. Osgood's (1967) Graduated Reciprocation In Tension-reduction (GRIT) theory suggested that unilateral initiatives can lead to

graduated and reciprocal reduction in tension. The focus is on one state taking the initiative, not by creating threats and tensions, but by reducing and controlling them. Osgood expected that such an initiative will be reciprocated by others, with tension gradually reduced, and the probability of conflict or war lessened. Similar possibilities for cooperation were analyzed by Keohane (1984).

George (1983) analyzed the U.S.-Soviet relationships and concluded that in times of crisis they have better chances to improve relations than in regular times. Through a series of crises, and their management, the superpowers developed procedures for cooperation in the interest of crisis prevention. And it was the worst crisis--the Cuban missile--that contributed the most to a significant improvement in the superpowers' relationships. "The shared experience of being on the brink of a possibly disastrous war aroused strong incentives to reexamine the past attitudes and policies that had led to the dangerous crisis" (George 1988, 223).

In the nuclear age, any conflict is liable to escalate to nuclear confrontation, moreover so any use of force (Kahn 1965). Even when the preferred choice of each side is to take advantage of the other cooperation is possible, while big transactions are sub-divided into a series of small ones, where any single instance exploiting the other does not produce overwhelming gains, and if each side knows what the other is doing (Jervis 1989). In fact, the superpowers cooperated in establishing methods of crises management and

prevention, mainly due to the uncertainty with regard to the conclusion of conflict, and the predicted terrorizing outcome of any anticipated direct confrontation between them. They have learned to accommodate and manage conflicts by means short of the use of force (Harkabi 1983).

International regimes are forms of cooperation among rivals. Even under conditions of the absence of formal institutions with power of enforcement, the development of common principles, norms, and rules can facilitate cooperation (Krasner 1983).

Jervis (1989) discussed the basic components of cooperation, and stressed the necessity of having reliable systems of intelligence and inspection for the opponents.

With or without formal agreements, [inspection and intelligence] can increase cooperation and mutual security both by alleviating fear that the other is increasing its arms and by making it unlikely that either could think that it could engage in a buildup without being detected (Jervis 1989, 59).

The state's demand for information is bi-directional. It is as important to know as it is to let the opponent know, thus reassuring him that he is not about to be attacked or betrayed. Furthermore, and as deterrence theory stressed, concessions during cooperation should not be viewed as stemming from weakness, since they will lead instead to

increased pressure (Schelling 1966). An important element under cooperation is for the opponents to make conditional threats and promises (Axelrod 1984).

The necessity of cooperation, as mentioned above, suggests that nuclear rivals maintain their opposing vital interests as they simultaneously cooperate tacitly or explicitly.

A. Respecification for SNPs

In analyzing nuclearization of SNPs, several conceptual modifications are appreciated. First, the process of nuclearization of SNPs is different from that of nuclear powers. While the nuclear powers tested their nuclear capability as soon as it was operational, SNPs had to retain ambiguity with regard to their nuclear capability and its scope.

Second, the study of regional nuclearization requires the examination of the nuclear potential of SNPs, whether nuclear option, bomb in the basement, or reputed capability. In addition to the threshold dividing nuclear conventional weapons, which the SNPs have in common with the major nuclear powers, the SNPs have another threshold. The nuclear option has at some point to be realized and perhaps demonstrated to the adversary to whom a minimum deterrent impact. Such threshold provides an opportunity for outside intervention by superpowers or international agencies to prevent the worst case.

The third conceptual respecification refers to the evolution of deterrence in conflictive regions. The existence of nuclear option in any region introduces the supreme interest of the involved actors to avoid nuclear use. But nuclear consciousness no doubt exists prior to a nuclear option decision, owing to SNPs participation in multilateral arms control diplomacy. The foreword of a nuclear option creates the existential basis for deterrence. That was after all behind the decision to build an option. Whenever a nuclear dimension approves, according to deterrent logic the mutual vulnerability to nuclear attack sets limits on how the opponents resolve long-lived disputes.

Fourth, the success of mutual deterrence in stabilizing nuclear regions is not derived necessarily from the numbers and quality of nuclear warheads. A deterrent threat is convincing thanks to the great vulnerability of SNPs to nuclear attacks, even by a few warheads. Deterrence is enhanced by the uncertainty of the belligerents about the effectiveness of any possible first use. Thus, nuclear deterrence through uncertainty (Kissinger 1961) also affects a regional balance of power and is likely to contribute to regional stability, despite the qualitatively and quantitatively different levels of nuclear capability in the regional system.

CHAPTER 3

THE EXPERIENCE OF THE SUPERPOWERS

I. The Introduction of Nuclear Arms

The post World War II experience of the superpowers, the United States and the Soviet Union, sets the framework for the comparative analysis of nuclear proliferation. The patterns of behavior of the superpowers also serves as a standard for the hypothesis of this study--that nuclear proliferation and the consequent adoption of nuclear deterrence strategy encourages the non-use of the weapons--leads to accommodation and cooperation between the belligerents, and eventually probably contributes to moderation of conflicts.

The step-by-step emergence of nuclear capability in the hands of the superpowers and the development of nuclear deterrent postures made both sides highly vulnerable and exposed to unacceptable costs. The newly imposed risks and dangers influenced them to develop an effective second strike capability, thus introducing a balance of terror. Being conscious of the hazardous effects of nuclear exchange, and sensitive to the costs it would bear, the superpowers found themselves limited in their deeds by the nuclear threshold. Stability was enhanced by the advances of nuclear capability and doctrine. Furthermore, the actors necessarily resorted to

measures of crisis management, arms control and cooperation in order to reduce risks and to support stability in the world. Nuclear deterrence and its political implications reduced tensions and consequently moderated the conflict between the superpowers.

When nuclear arms were initially introduced into the American arsenal, they were thought of as 'just another weapon'. There was a consensus among statesmen to use the atomic bomb as part of the war efforts. Freedman wrote that once the U.S. nuclear program was well under way, the responsible officials expected a substantial return on their investment. "When and if the bomb became available it would be a weapon to be employed against the enemies of the United States, whatever these enemies had available in their own arsenals" (Freedman 1983, 15). Henry Stimson, Secretary of War from 1940 to 1945, pronounced that the "common objective throughout the war was to be the first to produce an atomic weapon and use it" (Stimson and Bundy 1948, 361). President Truman said he had "Never been happier to make that announcement" (Herken 1980, 4). Between the years 1945-1949, the Truman administration practiced 'atomic diplomacy' (Herken 1980), using the American monopoly of the bomb as a major bargaining card to gain political advantage in negotiations with the Soviet Union. However, the administration was disappointed when realized, as was observed by Secretary of State James F. Byrnes, "[the Soviets were] Stubborn, obstinate, and they don't scare" (Herken 1980).

The American monopoly of atomic weapons ended by 1949, nonetheless it took several years until the awareness of the special character of nuclear arms and its use for deterrence was crystallized. Even as late as early 1953, President Eisenhower perceived nuclear arms as "not different in kind from conventional ones" (Jervis 1989, 3). Notwithstanding the perception of the administration and the military, civilian planners emphasized the change in kind, and as early as 1946, comprehended that security might be achieved by preventing war, not fighting one. Brodie was the pioneer in stressing that future wars might be prevented as a result of the unique nature of the weapon, and that the weapon should be used solely for deterrence. Brodie stressed:

The first and most vital step in any American security program for the age of atomic bombs is to take measures to guarantee to ourselves in case of attack the possibility of retaliation in kind. . . . Thus far the chief purpose of our military establishment has been to win wars. From now on its chief purpose must be to avert them. It can have almost no other useful purpose (Brodie 1946, 76).

For the following years, especially in light of the loss of nuclear monopoly, the American administration and military adopted the line of mutual deterrence. President Eisenhower wrote:

We are rapidly getting to the point that no war can be won. . . . No one was going to be the winner in such a nuclear war. The destruction might be such that we might have ultimately to go back to bows and arrows (cited in Jervis 1989).

The policy aim of the superpowers and their allies gave priority to the creation of a strategic framework which assumed that a nuclear attack would lead to a nuclear response. "It was agreed almost without a dissenting voice that nuclear wars were 'unwinnable'. A nuclear exchange on any scale would cause damage of a kind that would make a mockery of the whole concept of 'victory'" (Howard 1983, 134). Hence, nuclear weapons have drastically altered the Clausewitzian relation between force and statecraft. Since 1945, and for the longest period in history (Nye 1987), wars did not occur between the main world rivals. The nuclear reality has routed the superpowers towards cooperation, moderation of conflicts, and nuclear peace.

II. The Superpowers Arms Race

The commencement of nuclear proliferation is marked by an arms race between the superpowers. Motivated by the ambition to possess the bomb and then to assure a sufficient deterring capability, the United States and Soviet Union found themselves dragged into an extended nuclear arms race. Eventually they found themselves with enough warheads in place around the world to destroy every city on the globe several times over. Yet the superpowers continued to modernize and expand their arsenals. A brief summary of the extent of this proliferation follows.

A. Nuclear capability

Although the nuclear capability of the superpowers is a widely discussed subject, no exact figure of nuclear warheads is to be known and verified officially. Published figures¹⁰ indicate that the total number is around 40,000 warheads, yet the precise number seems to be insignificant in light of the U.N. Secretary-General's illustration:

The total strength of present [1980] nuclear arsenals may be equivalent to about 1 million Hiroshima bombs, i.e., some 13,000 million tons of TNT. It is often pointed out that this is equivalent to 3 tons to every man, woman, and child on earth (Gregory 1986,19).

¹⁰ See SIPRI's yearbooks.

The enormous stockpile of nuclear warhead was the prime goal of both superpowers' military development for many years.

B. Delivery Systems

The enormous arsenals of nuclear arms in the hands of the superpowers are supported by assorted accurate delivery systems. The nuclear establishments in both superpowers are mainly based upon long-range missiles of three types:

- The land-based inter-continental ballistic missiles (ICBM) are considered highly reliable and accurate, ready to be launched at any time.
- The submarine-launched ballistic missiles (SLBM) are considered less accurate than ICBMs, suited for attack of large targets.
- The third delivery method, more in use by the U.S., is long-range bombers. The bombers could carry either gravity bombs or cruise missiles. The advantage of this delivery system is the ability to be recalled after dispatch, or retargeted en route.

The multiple independently targetable re-entry vehicle (MIRV) system is a 'bus' carrying several war-heads which are released separately, each one to its own target. The 'bus' of MIRV systems could carry either ICBM or SLBM.

C. Survivability of weapons

For effective deterrence, nuclear arsenals are designed to survive various potential first strikes which are liable to

cripple the adversary's means of retaliation. There are several methods used in order to attain survivability:

- A variety in delivery systems which achieve redundancy.
- A large quantity of weapons which requires a larger quantity by the adversary who intends to disable it. Indeed, each superpower possesses more nuclear warheads than can be used (Gregory 1986).
- Mobility of weapons - this is mainly achieved by submarines that can launch while under-water and bombers on 'airborne alert'.
- Hardened silos for ICBMs that can absorb some nuclear assault.
- Alertness of *quick reaction or ground alert-teams*, ready to fly their nuclear armed bombers or launch the missiles (the U.S. carry a 15 minutes ground alert of about 50 percents of the strategic air command force).
- Dispersion and spreading of missiles, submarines and bombers in the two immense countries and around the world.
- Concealment of the weapons in the vast territories and under the seas, and secrecy concerning location and procedures for launch.

D. Invulnerability of C³I systems

In order to assure the availability of Command, Control, Communication and Intelligence (C³I) systems for leaders, both sides instituted systems which include sensors to detect an incoming attack, command centers to evaluate the information,

a rank of decision makers authorized to order the use of nuclear weapons, communication networks connecting these elements and the strategic nuclear forces, and intelligence resources to gather, analyze, and communicate information on the status of the adversary's war-making capability. Neither the basic structure nor the technical details of such C'I systems are publicly known (Gregory 1986).

III. Deterrence Between the Superpowers

The awareness of leaders of the superpowers, with regard to nuclear capabilities in a bipolar system, changed their approach to deterrence. The traditional *deterrence by denial*, the customary posture in a conventional system, was transformed to *deterrence by punishment* stance (Snyder 1961). Traditionally, powers deterred others from attacking them by being capable of repelling such an attack (military superiority). In the nuclear era, where defense is impossible, the superpowers deterred each other by raising the cost of a potential conflict to unacceptably high levels. "It was the prospects of fighting the war rather than the possibility of losing it that induces restraint" (Jervis 1989. 9). In essence, deterrence postures of the superpowers did not change much over time following the primal nuclear awareness. Although the methods and titles of deterrence strategies were modified, these variations have not produced pivotal alterations in the superpowers international behavior. It seems that the influence of the fear of war on political leaders is not sensitive to the details of doctrine and war planning (Bundy 1983).

Robert McNamara's doctrine of 'assured destruction' 1962, promoted the idea of second strike capability and brought about a full awareness and irrevocable acceptance of nuclear deterrence as a doctrine of punishment, one which is based upon non-use by both sides. This doctrine has later advanced the formulation of Mutual Assured Destruction (MAD). The

different strategies of deterrence adopted by the superpowers were exhausted by the reality of MAD. The inevitable consequence of mutual deterrence was a need for arms control and cooperation, not out of friendliness but as a result of fear and basic instinct of survival.

A. The Shape of Deterrence

The strategic path to Mutual Assured Destruction, and from there to arms control and cooperation, was not a short one. It started with conventional thinking, through competition of being the first to develop the bomb and the subsequent American monopoly, and continued with a mutual nuclear arms race between the superpowers and different conceivable ways of utilizing the bomb. As MAD became a realized deadlock, thinkers retrieved from ideas of employing the bomb for anything else but deterrence.³² The only way out of the strategic deadlock seemed to be found in arms control programs.

The first development in nuclear strategic planning in the U.S.A., both during the years of monopoly and the early times of nuclear parity, was the perception of the bomb as a means of punishing aggressors. Nevertheless, the Truman administration rapidly realized that the bomb is more of a

³¹ Both prior to and after 1962.

³² Henry Kissinger, for instance, withdrew from his ideas for using the bomb in Nuclear Weapons & Foreign Policy (1957). His new approach is stressed in The necessity for Choice (1961).

deterrent weapon than a conventional one. Truman wrote in 1948:

I don't think we ought to use this thing unless we absolutely have to. It is a terrible thing to order the use of something that is so terribly destructive beyond anything we have ever had. You have got to understand that this isn't a military weapon. It is used to wipe out women, children and unarmed people, and not for military use. So we have to treat this differently from rifles and cannon and ordinary things like that (Lilienthal 1964, 391).

In spite of the opinions of Truman and other strategists,¹³ many in the U.S. government yet viewed the bomb as another component in the service of the military. This view was accompanied by further developments of the H-bomb¹⁴ and tactical nuclear weapons.¹⁵ A similar view was held by the Soviets, following Stalin's doctrine of Permanently Operating Factors (Freedman 1983).

1. **Massive Retaliation:** The first variation in strategic thought in the U.S.A. was that of *Massive Retaliation*, stressed by John F. Dulles in early 1954. This

¹³ Such as Bernard Brodie (1946) and George Kennan (1958).

¹⁴ Hydrogen (fusion) bomb, also referred to as Super bomb.

¹⁵ These thoughts were expressed in the NSC-68 paper.

new doctrine was founded on an indiscriminating threat to respond to any communist-inspired aggression, however marginal the confrontation, by means of a massive nuclear strike against the centers of the Soviet Union and China (Dulles 1954). The new policy was based on giving far greater emphasis to nuclear weapons, but it was much more complex than a sheer belief in the value of all-out nuclear threats as a deterrent to virtually any unwelcome Soviet move (Freedman 1983). Yet, it was assumed that a possible Soviet attack on the U.S. could be deterred merely by the possession of large stockpiles of nuclear weapons and delivery systems. It is the nuclear capability itself that assures a proper retaliation to any scale of Soviet hostility. As the Soviet nuclear capability increased, especially greater accuracy of delivery systems and additional invulnerability of missiles, The Americans became aware of the emerging mutual destructive capabilities and its repercussions.

2. Mutual Assured Destruction (MAD): The second, and much more prominent, modification in the formation of strategy was the recognition of balance of terror and MAD. Albert Wohlstetter's (1959) introduction of the notion of *relative and dynamic deterrence capabilities* has terminated the belief in an absolute deterrence. The nuclear deterrence capabilities should be relative to those of the opponent, he argued, not only in its numerical aspect, but also in their residual ability to survive an incoming attack and strike back

at the aggressor. The survivability of weapons created the 'delicate balance of terror' between the superpowers by minimizing the incentives for a first strike and terrifying the belligerents from any careless move. Many strategists¹⁶ and generals were dissatisfied with the restrictions this new situation imposed, thus strived to insinuate methods of limited war. Nevertheless, Robert McNamara (1968), U.S. Secretary of Defense 1961-1968, followed this notion by emphasizing the need for an assured destruction, which is the calculated relative capability needed to guarantee a second strike capability, and put an emphasis on making the American nuclear force invulnerable. When the Soviet Union attained a sufficient level of invulnerable nuclear force in the mid-1960s, the superpowers reached a stable mutual deterrence due to *Mutual Assured Destruction*.

During the early times of MAD, concerns about a possible destabilization were still expressed in the U.S.A., resulting from the distinct Soviet approach to deterrence. While the Americans viewed MAD as providing a feasible basis for nuclear deterrence, the Soviets emphasized nuclear war-fighting strategy. "At the heart of Soviet strategy has been the belief that the best way of deterring a nuclear attack upon the U.S.S.R. is by being supremely prepared to fight, survive, and possibly even win a nuclear war" (Williams in Baylis 1982, 78). Defense postures were perceived as important as second

¹⁶ Especially those who promoted the concept of Limited War, see below.

strike capability, and protecting the 'homeland' while limiting damage has a first priority (Ericson 1971). The tension arose from the situation in which one side emphasized assured destruction and improved the invulnerability of systems, while the other cared much about damage limitation and enhanced air defense systems and Anti-Ballistic Missiles (ABM). This strain contributed to a further vertical arms race between the superpowers whereas one might expect stability.

The emerging nuclear arms race, and the improvement in the deterrent force of each side, contributed to the mutual perception of threat and distrust which in return boosted the arms race. The problem was exacerbated by the technological development of the later 1960s and early 1970s (Martin 1973), primarily due to deployment of ABMs and the improvement in the accuracy of ICBMs and MIRV systems.

Notwithstanding the aforementioned tension and arms race, the superpowers found themselves in a strategic deadlock created by the balance of terror and MAD, where war meant a mutual holocaust. The realization of the mutual destructive capability and the fear that came along with it exhausted any aspirations of annihilating the opponent. The new reality provided the incentive to keep conflicts and possible future clashes limited, even in a case that nuclear weapons are introduced. It prompted attention, thus, to focus upon *Limited*

war and *Flexible response* strategies.¹⁷ Adding to that the increasing costs of the futile arms race, the superpowers have realized the urgency to limit strategic armament and cooperate in avoiding any misuse of the weapons. It was only after exhausting the prospects of limited war that MAD became a fact of life and Arms Control an essential.

3. *Limited war*: The first superpowers' considerations concerning limited war came out during the era of massive retaliation. Nevertheless, it was urged by the nuclear status-quo dictated by MAD, by the desire to strengthen deterrence to cases where nuclear use would not be justified, by moral preference of counter-force over counter-city targeting, and by the demand to demonstrate credibility regarding allies and other spheres of influence. It was believed that limited wars could be proportional to the interest at stake, hence, allow actions and reactions which are less than a massive nuclear retaliation. The assumption that threats of massive retaliation would be applicable to all cases might bring the failure of deterrence in some nonessential circumstances (Kissinger 1961). War is less likely indeed, but not impossible.

The Korean War demonstrated that American nuclear superiority was incapable of deterring the Soviets from challenging American interests. General Maxwell Taylor, then

¹⁷ These new concepts, although with marginal effect on mutual deterrence, are elaborated later on.

Army Chief of Staff, stressed that "[it was] just as necessary to deter or win quickly a limited war as to deter general war" (Taylor 1960.6)

The concept of limited war is based on the idea of fighting wars, even a nuclear war, while setting limited and attainable political objectives and using limited quantity and quality of the military capability. Osgood suggested a general definition:

A limited war is generally conceived to be a war fought for ends far short of the complete subordination of one state's will to another's and by means involving far less than the total military resources of the belligerents, leaving the civilian life and the armed forces of the belligerents largely intact and leading to a bargaining termination (Osgood 1969, 41).

Ideas of limited war were employed in four different ways (Garnett, in Baylis 1982). First, the term was sometimes used in reference to wars which are limited geographically - wars which are fought in and confined to restricted areas of the world. Second, it was proposed as a description of wars fought for limited objectives. "The belligerents restrict the purposes for which they fight to concrete, well-defined objectives that do not demand the utmost military effort of which the belligerents are capable and that can be accommodated in negotiated settlements" (Osgood 1957).

Kissinger (1957) suggested that the more moderate the objective, the less violent war is likely to be, and advised that the choice of weaponry and the manner of their use would be governed by the war aims of the belligerents. Third, the concept was applied to describe wars fought with limited means. Restraints are practiced by the belligerents in respect to the quantity and quality of the weaponry used in the conduct of war. "In a limited war both sides limit their might. It is a confrontation of limited forces, a war of partial efficiency" (Harkabi 1983, 118). Fourth, the limitation of wars involve restrictions on targets selected for attack. This is the principle of McNamara's counterforce strategy which sought to discriminate between military and civilian targets. "In the event of a nuclear war stemming from a major attack on the alliance, [our objective] should be the destruction of the enemy's military forces, not of his civilian population" (McNamara 1962, 67). In such a limited war, the opponents refrain from targeting urban centers while continuing deterrence during fight. A limited war was expected to include one or more of these limitations.

The notion of limited war met many problematic aspects. The most prominent aspect was that ideas of limited war brought war back into the realms of political practicability (in 'Clausewitzian' terms). Ideas of limited war undermined the strategy of deterrence in a nuclear world, merely due to the fact that war in the modern world could result in mutual suicide. The concept of limited war subverted the essence of

deterrence as a skillful prevention of war.

Moreover, the process of escalation makes it very difficult to impose limitations during combat. There is always the possibility that limited wars would escalate into total wars. "Because of its competitive character war places a heavy premium upon the attainment of an advantage, however fleeting, and this in return invites imitation. As the belligerents strive to gain a comparative advantage, the conflict undergoes an expansion" (Kaufmann 1956, 122).

Strategists have discussed three categories of limited wars: conventional wars, limited tactical nuclear wars, and limited strategic wars (with a controlled nuclear reprisal).

3.1 A conventional war indicates a limitation of means. It emphasizes the nuclear threshold and distinguishes between the use of conventional and nuclear weapons. Any other limitations are secondary under this category. The need to emphasize conventional strategies emerged from the insufficient experience during the era of massive retaliation (Korea, Vietnam, Berlin). Nonetheless, the existence of nuclear capability deters both sides from resorting to nuclear arms. A conventional war means refraining from use of nuclear weapons even during graduated escalation. Once nuclear weapons are used, the nuclear threshold is crossed and all restraints might disappear. The temptation to resort to ever more destructive means will then be overwhelming.

The conventional approach holds four advantages: It

provides the best chances to limit conflicts which may break out (Kissinger 1961); by its nature, the war is 'slower' than nuclear war and it spares time for diplomacy; nuclear deterrence is still in effect throughout the fighting (Schelling 1980); and lastly, during a conventional war statesmen deal with traditionally known situations while nuclear war is an unfamiliar mode of warfare (Kissinger 1957).

3.2 A limited tactical nuclear war emphasizes limitation of means--the employment of small tactical nuclear weapons, limitations of political objectives, confinements of location--using nuclear weapons at the battlefield but not on the superpowers homeland, and restraints on targets selected for attack--a counterforce strategy focused on the opponent's forces at or near the battlefield. The development of tactical nuclear strategy evolved from the disparity in manpower between the Communist bloc and NATO forces in Europe. "Nuclear weapons can serve as a substitute for manpower. At the very least they will force an aggressor to disperse his forces. These will prevent breakthroughs of established defensive positions and consolidation of occupied territory" (Kissinger 1961, 76). Kissinger marked the benefits of limited tactical nuclear war. First, the limited tactical nuclear war approach can deter a concentration of offensive forces while utilizing relatively small defensive units. Second, the presence of tactical nuclear weapons would complicate the aggressor's battlefield calculations due to the

lack of nuclear experience. "There would always remain the inevitable uncertainty of embarking on a course in which no experience is available" (1961, 77). Third, limitation of war is accomplishable since general deterrence remains credible. From the American point of view emerged the fourth advantage. Tactical nuclear weapons would be "an effective device to weaken Communist control over the satellite areas" (1957, 191). Fifth, Kissinger argued: "Nuclear weapons are our best weapons, the result of our most advanced technology. To forego using them is to deprive ourselves of the advantages of a superior industrial potential" (1957, 191). Sixth, the presence of tactical nuclear weapons enhances general deterrence. Harkabi (1983) argued that the more the quantity of tactical nuclear weapons possessed by the belligerents, the less the possibilities of using them. The maneuverability of military troops is proportional to the amount of tactical nuclear weapons to be used in the battlefield. Seventh, a limited tactical nuclear war would probably take place in regional conflicts, such as in Europe. It means that the superpowers would avoid striking each other's territory, a limiting factor by itself.

The notion of limited tactical nuclear war was widely criticized. Kissinger (1957) who advocated the use of tactical weapons later admitted that it is almost impossible to put restrictions and clearly define what is a 'legitimate' tactical nuclear weapon. The American Air Force, Army and Navy, he stressed (1961), could not agree on the definition of

limited nuclear war, and which doctrine should be adopted. The more so, one cannot expect the Soviets and the Americans to reach clear definitions of how and what to limit. This point concedes with the assumption that once nuclear weapons are introduced, and the nuclear threshold crossed, all restraints are liable to disappear.

The process of escalation undermines the foundations of limited tactical nuclear war to a large extent. Since there are no clear limitations, the defeated side is likely to use his more destructive nuclear weapons in order to stabilize positions at the battlefield. This is the danger of escalation--the increasing of the increments of force to the point limited war would insensibly accelerate to total war. By seeking to avoid the ultimate risk, the strategy of limited tactical use of nuclear weapons makes an all-out nuclear war almost inevitable. Halperin (1963) emphasized the debate over tactical weapons as defensive weapons. On the one hand, tactical weapons enable one to overcome manpower inferiority and deter an enemy from concentrating aggressive forces. A small defensive unit is able to hinder a much greater attacking force. On the other hand, tactical weapons in the hands of a small and relatively weak aggressor might enable him to break through a much stronger defensive posture.

3.3 A limited strategic war assumes a reciprocal limited nuclear strike. The volume and targets selected for attack are limited. This form of limited war highlights the prospect

of such nuclear engagement that would make both sides prefer negotiation over the cessation of hostilities. It presumes that the superpowers would prefer ceasing mutual destructiveness while it is still feasible, over escalating towards total war. This concept was initially suggested by Szilard who suggested to inflict a sufficient damage on the aggressor in order to make him desist without impairing his retaliatory capability. "In case of an attack on Iran, for instance, we might announce that we would destroy certain specific Soviet installations of cities each week, until the Soviet army had again withdrawn behind its borders" (Szilard in Harkabi 1983, 131). Thus, the aggressor would favor settlement when the cost of retaliation exceeds the value of his objective. Szilard's idea was refined to the strategy of 'controlled reprisal' or 'limited strategic war'. It means a war of limited graduated retaliatory exchange, a nuclear 'eye for an eye or city for a city' policy. It suspects that both sides would be driven to stop escalation and deterioration, and strive for limitations and restraints. Both sides at first would cooperate, through tacit bargaining or direct negotiations, to limit dangers and then to stop them. The aim of the nuclear retaliatory attack would not only be to punish the adversary but also to deter him from escalating the confrontation. The objective of the attack is not to weaken the opponent's offensive capability but to influence his intentions and decisions. This war is more political than military oriented--a struggle of intentions and intra-war

deterrence.

There are four advantages in the concept of limited strategic war. First, it reduces the chance of unintentional wars escalating to an all-out war. In an accidental war for instance, the side that launch a missile by accident will be retaliated against on the same scale of damage. Since a balance of destruction is achieved, nuclear exchange will stop and the adversaries will resort to negotiations. Second, and in comparison with the vulnerability of tactical weapons, strategic missiles are invulnerable. Thus they are not an easy target for first preemptive strikes. Third, the use of strategic weapons that are liable to strike the superpowers' own territories would enhance deterrence further than potential damages to military forces abroad and harm to allies. Forth, the use of strategic weapons requires a higher level of decision making. This grants more control on limitations than battlefield decision making units with tactical weapons.

In spite of the aforementioned values, the concept of limited nuclear war is quite a risky one. Once the nuclear threshold is crossed, it is a very *slippery slope* from the use of tactical nuclear weapons to limited use of strategic weapons and than to an all-out strategic nuclear war. Limited nuclear war is much more preferred to total war, and for this reason alone the superpowers considered it. Yet, one should realize that to engage in limited war means to unleash dangerous and inherently unmanageable nuclear forces.

Many scholars argued that nuclear war cannot be limited. Brodie (1973) stressed that the very existence of nuclear arsenals repeal the possibility of any war but total war. Nuclear arms, in fact, deter to a great extent any kind of war between the superpowers. Schelling opposed the concept of limited nuclear war. He disputed the idea that states will be able to brake after the first use of nuclear weapons. "If nuclear weapons are introduced, the sensed danger of general war will rise strikingly" (Schelling 1980, 108). Deitchman inferred from remarks of Soviet scholars that Soviet strategists believe nuclear wars cannot be kept limited. Soviet scholars stated:

American planning for tactical nuclear weapons is merely a strategy to hobble the Soviets in case of war; If we [Soviets] use any nuclear weapons, they will feel free to use any size weapon in their arsenal that will bring a military advantage (Deitchman 1969, 46).

Considerations of limited war started during the Eisenhower presidency. The gradually emerging consensus came to fruition with the official change to 'flexible response' by the succeeding administration of President Kennedy and his Secretary of Defense Robert McNamara. The new strategic posture was designed with control, selectivity and discrimination in mind. It intended to provide the choice, in McNamara's (1968) words, between suicide and surrender, and to

let the government have the capacity to cope with all kinds of aggressions, conventional and nuclear alike. Under McNamara, the number of tactical nuclear weapons in Western Europe increased enormously to over 7,000 warheads."

The Soviets, not holding back, increased the quantity of tactical nuclear warheads and continued to harden the launching sites of their ICBMs. McNamara realized during the mid-1960s that the utility of flexible response was temporary, and admitted that a nuclear war would be "bilateral [and] highly destructive to both sides."¹⁸ Later on, the U.S. government has gradually withdrawn from the counter-force and damage limitation options and dwelled on MAD and second strike capability.

A similar trend was detected in the Soviet Union which demonstrated confidence in the stability of the balance of terror. The Soviets did not foresee the advantages of limited counter-force strategy. Marshal Sokolovsky declared: "A strategy which contemplates attaining victory through the destruction of armed forces cannot stem from the idea of a 'retaliatory' blow; it stems from preventive action and the achievement of surprise" (1963, 88). In the 1960s, "Khrushchev amended the traditional emphasis on the ground forces, and instead moved towards a more ostensibly nuclear defense posture. This has been characterized as minimum

¹⁸ Numbers are quoted in Williams, in Baylis (1982), 205.

¹⁹ McNamara, Speech before Economic Club of NY, November 18 1963, quoted in Williams, *ibid*.

deterrence. . . . Priority resources [were] diverted to strategic offensive forces and the air defense" (Booth 1974, 132).

The second half of the 1960s saw the emergence of MAD and second strike capability. Both superpowers became aware of the inapplicability of limited war and were convinced that the nuclear dimension is present in all conflicts between the superpowers. They assigned top priority to assured *destruction* and *arms control* efforts. By the end of the year 1966, McNamara was convinced that in order to assure stability and avoid the temptation to strike first, or otherwise use nuclear weapons, mutual restraints would have to be negotiated between the superpowers (Freedman 1981). McNamara's assistant, John McNaughton, introduced the concept of 'non-zero sum games', referring to the

Possibility of mutual improvement of security through the use of non-negotiated techniques [such as] reciprocal fear of surprise attacks reflected back and forth like images in a room of mirrors. We must, in every decision we make, concern ourselves with the factors of stability and of the dynamic effect of the arms race (Cited in Kaufmann 1964, 140).

Strategists carried on the quest for possible strategic modifications and improvements, such as Secretary of Defense James Schlesinger's 'limited selective options' and President

Reagan's Strategic Defense Initiative (SDI). Nevertheless, both superpowers understood that the future depends to a great extent in avoiding wars. Kennan stressed:

There is no way in which nuclear weapons could conceivably be employed in combat that would not involve the possibility--and indeed the prohibitively high probability--of escalation into a general nuclear disaster. Limited nuclear war is [found to be] a false concept (1982, 195).

The strategic reality of MAD and the predominating balance of terror channeled political efforts toward doctrines of arms control, confidence building measures and crisis management. This new inclination promoted cooperation between the superpowers and contributed to stability and moderation of conflicts. Balance of terror has become the gate-keeper and guarantor of the nuclear threshold of non-use.

IV. The Corollary of Deterrence

The credible mutual deterrence between the superpowers enhanced stability in their relationships, primarily as a consequence of the balance of terror and mutual second strike capability. The dilemma of credibility of nuclear deterrence⁴ was marginal since the expected hazardous outcome of nuclear exchange between the superpowers was clear and powerful. The superpowers were encouraged by the involved nuclear dimension to refrain from war. The fear of escalation motivated them to manage and prevent crises before they come to a crucial point of no return, when nuclear arms are introduced in the face of a conventional military defeat. Khrushchev stressed this point:

Now [early 1950s] that the big countries have thermonuclear weapons at their disposal, they are sure to resort to those weapons if they begin to lose a war fought with conventional means. If it ever comes down to the question of whether or not to face defeat, there is sure to be someone who will be in favor of pushing the button, and missiles will begin to fly (1976, 603).

Due to MAD, and immense improvement of C³I systems which enhanced credibility, the superpowers shared a basic duality

⁴⁰ A big worry in a conventional deterrence which seemed to occupy American statesmen with regard to nuclear deterrence more than really needed (Waltz 1990).

of purpose--to retreat from a possible nuclear conflict of any sort. And this is the nuclear threshold that urges leaders to repel any use of force toward each other. A cooperation in order to assure crisis management by means short of war become a necessity (George 1983).

A. The Cuban Missile Crisis

The Cuban Missile Crisis of 1962 demonstrated the applicability of mutual nuclear deterrence between the superpowers. When both sides had the capability to inflict a tremendous punishment on each other, the factor of nuclear capability ruled itself out. The probable 'winner' in a dispute between the adversaries would be defined by the relative determination of both sides (Feldman 1982). The strength of this determination is derived from the relative vitality of the issue at stake to the belligerents (Maxwell 1968). This balance of determination explains the outcomes of the Cuban Missile Crisis as in favor of the U.S.A., which would not accept a Soviet nuclear threat in its own backyard.

A nuclear crisis is a confrontation in which nuclear forces placed on alert and miscalculations leading to the actual use of nuclear weapons is therefore a distinct possibility (Bargman 1977). Thus, a nuclear crisis has no direct relation to the level of conflict.

In the beginning of the Cuban Missile Crisis both sides proceeded to the brink. When the danger of escalation to the use of force arose, the U.S.S.R. for which the issue was less

vital, withdrew. Both sides exhausted all means available before the resort to force. The possibility of escalating to the use of force, not to mention the use of nuclear weapons, helped to 'straighten out' misperceptions. The higher the risk, the less attractive is the crisis, and reevaluation of perceptions and estimations is at place. Thus, when Kennedy was informed about Soviet missiles in Cuba, whether nuclear or conventional, he acted to remove them by means short of the use of force such as a surgical air strike. One should note that a possible use of force does not mean an automatic escalation to nuclear confrontation between the superpowers. The bigger the force in use, the higher the fear of escalation and unintentional war, to say the least about an all-out nuclear war. Thus, leaders tend to re-estimate before they gradually add more force to the battlefield. This is especially so when nuclear arms are considered, thanks to the effectiveness of the nuclear threshold. Misperceptions are nullified before a real possibility of nuclear exchange (Feldman 1982).

Jervis, who advanced the notion of misperceptions in international relations, argued that in the few nuclear crises between the superpowers, especially 1962 and 1973,

Each side has been willing to make concessions to avoid venturing too near the brink of war. Thus, the more we see of the Cuban Missile Crisis, the more it appears as a compromise rather than an American victory. Kennedy was not willing to

withhold all inducements and push the Russians as hard as he could if this required using force or even continuing the volatile confrontation. . . . When the cost of seeking excessive gains is an increased probability of total destruction, moderation makes sense (Jervis 1988, 80).

Gaddis (1986) stressed that leaders of the superpowers have been exceedingly cautious in risking war with one another, as may be observed from the 1962 and 1973 crises. Misperceptions which were limited in scope are apt to 'straighten out' in light of the outweighing expected costs. There were attempts to explain the watchful behavior of the superpowers by other factors, such as pacifism or special quality of leadership. However, these factors are shadowed by the explanation of the existential logic of nuclear deterrence. The superpowers are not particularly known for their pacific temperament: since World War II the U.S.S.R. has participated in nineteen international wars and the U.S. in eight (Small and Singer 1982). This restraint can neither be attributed to any unusual quality of leadership: "The vision and competency of postwar Soviet and American statesmen does not appear to have differed greatly from that of their predecessors" (Gaddis 1986, 121). Nor did the bitter experience of two world wars convince them not to resort to arms in their relations: superpowers have exercised force against third parties for protracted periods of time, and at

great costs--the U.S. in Korea and Vietnam, the Soviets in Afghanistan. Thus, scholars have related this extreme caution to working of nuclear deterrence (Mandelbaum 1981; Morgan 1977; Howard 1983).

It seems that the crystal ball effect and the nuclear threshold in the minds of decision makers have contributed to the development of great nuclear consciousness among leaders, and induced pessimism as a permanent accompaniment to their thinking about war.

This tendency confirms the statement of this study, that when leaders do not wish to go to war they are likely to exhaust all possibilities before they resort to force. The existential characteristic of nuclear weapons has a 'sobering effect' (Gaddis 1986, 123) upon statesmen, especially in cases in which misperceptions or miscalculations are likely. Leaders are 'free' to misperceive the actions and intentions of the opponent, however the sobering effect of nuclear weapons, and the valid nuclear threshold, prevent them from careless actions and escalation to nuclear exchange. In Cuba, the possible use of a surgical air strike on the Soviet missiles would have contributed to escalation, yet there is still a great distance between the order of limited conventional strike on the homeland third party and the use of nuclear weapons. The superpowers might misperceive intentions of each other, as may be argued about the Cuban Missile Crisis, the U.S. invasion of Grenada or the Soviet invasion of Afghanistan. Yet, there are no misperceptions of each other's

capabilities. The clear comprehension of nuclear arms and MAD, and the validity of the supreme interest of both superpowers to avoid nuclear use, support the correction of possible misperceptions. They also lead the belligerents to carefully manage crises (Nye 1987), as in the case of the 1962 crisis.

This does not mean that nuclear theory and reality allow one to assume the inevitability of the non-use of nuclear weapon, but that there is a very high probability for a successful crisis management between the nuclear powers. There is "a code of reciprocal behavior guiding the competition, lessening the danger that it could become lethal" (Brzezinski 1986, 244). In the Cuban Missile Crisis, it seems that leaders of both sides lacked the technical mechanisms of arms control that could assist in managing the crisis in a less dangerous manner, as proven to be valid during crises which followed.

During the summer of 1962 Soviet Premier Khrushchev began to deploy intermediate-range missiles to Cuba, some ninety miles from the U.S.A. Carnesale (1983) suggested that the Soviet leader was motivated to take this action by the impression he had formed of the weakness of U.S. political will, and by Soviet military weakness which would be compensated for by posing this new and close-in threat. Both assumptions were eventually found to be false. The former turned out to be a misperception and the latter a miscalculation which ignored nuclear logic and expressed

conventional thinking.

The outcome of the crisis was a product of both sides' supreme interest in avoiding nuclear use. Although there was a threat and maybe a potential misperceived desire, of conventional use of force, the 'sobering effect' of the existential characteristic of nuclear arms, and its effect on nuclear consciousness, led to accommodation of both sides in order to conclude the crisis peacefully. The Soviet Union removed its missiles from Cuba, and the Americans promised not to invade Cuba and removed their missiles from Turkey. The exchange of letters between Khrushchev and Kennedy (Kennedy 1969) exemplified how readiness to accommodate through arms control can help solve the nuclear dispute. Arms control became the language of disputes, albeit it is more convenient to settle a technical nuclear dispute, as in the ensuing Test Ban Treaty, than it is to negotiate the underlying tensions that brought about the dispute. This tendency will be shown in the following regional disputes, where nuclearization created nuclear tension and added a nuclear element to the long-lived conflicts. The belligerents found it easier to negotiate arms control, and to accommodate in light of the newly-imposed nuclear danger.

The Cuban Missile Crisis enhanced the consciousness of both sides by demonstrating nuclear deterrence as a strong tool in preserving the status quo. The superpowers learned that the adversary is ready to take risks in war in order to discourage aggressive behavior. But both sides also learned

to respect each other and to manage crises through arms control.

There remained the speculative question of how the crisis would evolve in light of other U.S. actions, such as a surgical air strike on the missiles. It seems that the effectiveness of the nuclear threshold would be valid also after some use of conventional force, since the decision to upgrade from conventional to nuclear use is greatly different from the decision to escalate by conventional means. As long as the force in use is conventional, there are military hopes for benefits. But when nuclear weapons are employed, the clearly expected outcomes impose pessimism on leaders (Blainey 1973). Even a Soviet use of force did not undermine the validity of the nuclear threshold and the wish not to escalate, as happened after the Soviet shoot-down of a U-2 on 27 October 1962, an event which might have triggered a U.S. decision to retaliate against Soviet targets (Jervis 1989).

Furthermore, Brodie (1973) has argued that nuclear weapons prevent any use of force, including conventional and limited use, and it might be that this is the reason behind Kennedy's decision to place a naval blockade around Cuba and refrained from using force. The use of force, although raised as an option, was never taken as an attractive option. This notion was strengthened by Bundy who observed that each leader was "determined not to let matters spin out of control through any decision of his own" (Bundy 1988, 453). George argued:

During the course of the missile crisis,

neither Kennedy nor Khrushchev came to regard the initiation of war as an attractive step, one that offered an opportunity to make important gains. Nor did they come to regard initiation of war as necessary in order to avoid unacceptable damage to their interests. . . . The image of war in 1962 was that of horrible thermonuclear holocaust, as unimaginable catastrophe; and this image created powerful incentives to manage and terminate the confrontation before it began to escalate (George 1991, 255).

McNamara stressed that during the crisis U.S. decision makers were aware of the fact that any use of force, Ran the risk of triggering the launch of nuclear weapons from Cuba against the U.S. and the risk of Soviet retaliatory attack on Berlin or other vulnerable points on the periphery of NATO. . . . [They understood that] a U.S. President must, while defending our vital interests, prevent the confrontation between nuclear powers which could lead to nuclear holocaust [by] a strategy which applied pressure against the Soviets without ever pushing them to the point where they were forced to an irrational, suicidal, spasm response (Cited in Kennedy 1969, 15).

George (1974) mentioned American and Soviet misperceptions which led to the crisis, especially as resulting from a mutual general failure to understand the intentions, risk calculations, and reactions of the opponent. However, these biases were 'corrected' before the immediate nuclear threat, making both sides in a tense crisis to escape the brink of war. Brodie enhanced this argument about the Cuban Missile Crisis.

Both sides at once agreed that their quarrel could lead to nuclear war, which is impossible to contemplate and which would leave no winner. In effect, they were asking each other: how do we get out of this with the absolute minimum of damage to each other including each other's prestige? (Brodie 1973, 426).

B. Détente

The notion of détente is used to describe a very wide range of relationships. As explained by Secretary of Defense James Schlesinger, "Détente has included everything from mutual reconciliation to a nuclear alert during the 1973 war" (1976, 46). Herein, Stevenson's definition of détente is adopted. The concept of détente refers to the process of easing or reducing tensions between the superpowers, whose interests are so radically divergent that reconciliation is inherently limited. Détente presupposed a bilateral

relationship between superpowers whose perceived interests are basically in conflict. These conflicting interests and perceptions continually inject tensions into the relationship, thereby causing conflict and create disputes (Stevenson 1985). Détente reduces tensions, tensions which result from conflicting ideologies, struggle for power, perceptions and emotions.

Ideology, struggle for power, and influence stood at the core of superpowers' conflicts. One may notice that while the superpowers assented that restraint is the primal element of détente, they have disagreed on a common definition or a set of guidelines defining the nature or limits of restraint to be observed. Stevenson (1985) explained that the Soviets understood détente as a peaceful coexistence where states with differing social ideologies and systems can compete without resort to war-- competition mixed with cooperation. Whereas the Americans argued that détente is not a dynamic process, but a mechanism that guarantees peace and security through the maintenance of stability.

In spite of the fundamental perceptual difference between the superpowers, the most outstanding contribution of détente may be seen in the change it brought to the spectrum of conflict. Détente placed the conflict on the range between cold war and cooperation, replacing the traditional war-alliance scope.

The cold war between the superpowers after 1946, which arose over the question of Germany, laid the foundations for

détente. In light of the emerging conflict and rising tensions, where the armies threatened each other, economic relations were cut off, and bilateral negotiations minimized, the superpowers still managed to maintain their diplomatic relations, and communicated through the United Nations. As well, they managed to avoid direct military confrontation, in Europe and Korea, and continued to cooperate in some areas such as the control of Germany and keeping it from reunification.

The Berlin crisis, the stalemate over Germany, the "fall" of China, and the coming of the Korean war provided startling evidence that the United States and Soviet Union were headed on a collision course. As both sides moved to consolidate their allies politically and militarily, the spectre of a third world war became all the more real. . . . Both sides felt a need to reach some sort of accommodation which would keep the contest within bounds (Stevenson 1985, 27).

The term détente reflects the supreme interest of the superpowers to avoid nuclear war. Efforts of détente started as early as 1955, before the formation of MAD, yet they had been concentrated upon disputes not tensions. The mere existence of nuclear weapons in the arsenals of the superpowers, introduced détente to the context of the cold war. It was necessary in order to solve disputes and manage

conflicts. Thus, détente was not a substitute to cold war, but an embedded attribute of cold war.

The summit of July 1955 repeated and affirmed the required avoidance of war. It set the ground for détente and reestablished a dialog between the superpowers. The most prominent achievement in Geneva was the joint announcement of the necessity to avoid nuclear exchange. Although the delegates did not use the term, arms control may well be considered as having first been discussed at Geneva.

Several factors contributed to the development of détente during this era. The more salient of them was the lessening of ideological warfare between the superpowers and the development of the hydrogen bomb. This new technological advancement enhanced the fear of nuclear war and the wish to escape it. Furthermore, the conclusion of the war in Korea 1953, showed that it was more important for both sides to end the conflict than to win it, a view which was strengthened by the Austrian treaty of mutual withdrawal (Brodie 1973).

Détente did not reach a peak until the year 1963. George (1983) argued that a major crisis was required in order to advance superpower collaboration. Following the Cuban Missile Crisis the superpowers signed the Test-Ban Treaty, Hotline agreement and Non-Proliferation Treaty, thus substantially reducing the tensions and providing the background for peaceful competition and cooperation (Stevenson 1985). This view was expressed by President Kennedy: "A pause in the cold war is not a lasting peace. . . and a détente does

not equal disarmament. The United States must continue to seek a relaxation of tensions, but we have no cause to relax our vigilance."⁴¹ Khrushchev reciprocated by stating, "There are only two ways: either peaceful co-existence or the most destructive war in history. There is no third way" (1976, 192). Nixon claimed that "we must either live together, or we will all die together" (Steven 1985, 199). Unfortunately, détente relations were dimmed by the outbreak of the Vietnam war in 1965.

Efforts of détente were renewed in the SALT talks of 1969, and came to a conclusion at the May 1972 Moscow summit between Brezhnev and Nixon. The summit began another long period of détente, one which was characterized by many cooperative acts and agreements.⁴² In Nixon's words, "After a period of confrontation we are entering an era of negotiation" (Cited in Steven 1985, 149). Out of this period emerged an unprecedented series of agreements spanning the entire sphere of superpowers and East-West political, strategic, economic, scientific, cultural and social relations, from regulating superpowers competition in the arms race to liberalizing the flow of information.

To sum-up, there were three significant elements which stimulated cooperation between the two superpowers. First, the status quo was adequate and satisfactory for both sides,

⁴¹ Cited in the *New York Times*, 20 October 1963.

⁴² The ABM Treaty (1972), SALT I (1972, 1977), and SALT II (1979) were among the prominent ones.

thanks to their vast global involvement and acceptable spheres of influence. The superpowers showed no ample desire for challenging the status quo, thus limited their objectives. Second, the 'crystal ball effect' which was created by the nuclear capability enhanced stability in the international system. It 'helped' leaders to envision the destruction of a full-scale nuclear war and it made them determined to avoid it (Carnesale 1983). Third, the newly introduced fear of nuclear exchange and balance of terror paralyzed military oriented statesmen and encouraged them to prefer the status quo. As Kissinger said retrospectively, concerning the Cuban Missile Crisis, the Soviets had only "60-70 truly strategic weapons while we had something like 2,000 in missiles and bombs. [But] with some proportion of Soviet delivery vehicles surviving, the Soviet Union could do horrendous damage to the United States" (1979, 18).

V. The Moderation of Conflict

The strategic stalemate imposed by MAD, the balance of terror and the irrelevance of limited war strategies, all together led the superpowers to seek ways of minimizing the envisioned jeopardy of nuclear exchange. These efforts have gradually induced cooperation and moderation of conflict.

A. Arms Control

The concept of arms control includes all forms of cooperation between the opponents in the interest of reducing the likelihood of war, its scope and violence if it occurs, and the political and economic costs of being prepared for it (Schelling and Halperin 1985). The prominent rationale behind arms control was stated by Kennan (1982): "There is no issue at stake in our political relations with the Soviet Union--no hope, no fear, nothing to which we aspire, nothing we would like to avoid--which could conceivably justify the resort to nuclear weaponry" (p. 194). Efforts of arms control⁴³ between the superpowers started as early as the mid-1950s at the Geneva summit conference of July 1955. Yet, the anticipated relaxation of tensions did not occur until the early 1960s. In the wake of the Cuban Missile Crisis of October 1962, specific agreements about arms control and the control of

⁴³ During the 1950-1960s, a distinction was made between 'arms control' which aimed at restraints exercised upon armament policies, and 'disarmament' which focused on the reduction or abolition of armament (Bull 1961). Here, the two are included in arms control.

international crises established the foundations of a framework for the conduct of relations between the superpowers (Bull, in Stevenson 1985). It was the Nixon-Brezhnev meeting of 1972 that symbolized a more ambitious attempt to bring about a comprehensive relaxation of tensions, to create a structure of peace binding the two superpowers not only to coexistence but also to a program of cooperation. By all means, one may see the Strategic Arms Limitations Agreement (SALT I), which followed this meeting and signed in May 1972, as marking the beginning of the end of the cold war and the start of a climax of arms control (Long and Rathjens 1976).

The predominant mode of arms control was characterized by Singer (1962) as an 'armament-first' approach. This approach was based on the idea that tensions can only begin to be reduced and political disputes to be resolved after nuclear weapons are introduced. Osgood's (1962) GRIT⁴⁴ followed this approach, and it also can be found in the three leading works on arms control by Bull (1961), Schelling and Halperin (1961) and Brennan (1961). These theoretical cornerstones of arms control articulated a consensus on arms control as a central tool for tension reduction. It may also assist in damage limitation and arms expenditure reduction. The fact that a number of contributors of these works had served in the U.S. government thereafter⁴⁵ helped to transform their ideas into

⁴⁴ Graduated Reciprocation In Tension-reduction.

⁴⁵ Participants in the Harvard-MIT seminar that produced Schelling and Halperin's and Brennan's (1961) books had served under Kennedy and in RAND.

the basis of U.S. policy.

Diplomats negotiating arms control agreements faced the problem of achieving an agreement that assures security for both sides. Several obstacles were accompanied the process through the years. These were the obstacles of agreeing upon inspection, verification and enforcement. The United States has insisted on 'inspection before disarmament', while the Soviet Union asserted 'disarmament first' (Melman 1958). The quest for disarmament pulled the belligerents away from détente. Disarmament was not an instrument of détente, arms control measures were. Disarmament was the instrument of political settlement in order to end the cold war.

The issue of enforcement after inspection was left unsolved, though each superpower kept the option to withdraw from arms control agreements in response to the other's violation. Nevertheless, the perplexing issue of inspection was somewhat settled when Soviet leader Gorbachev accepted the on-site inspections in the Intermediate-range Nuclear Forces Treaty (INF), and Strategic Arms Reductions Talks (START).

Arms control endeavors may be classified under three categories:⁴⁶ agreements of area preventive, such as the Antarctica Treaty, the Exploration and Use of Outer Space and Latin America Nuclear Free Zone, and the Seabed Treaty; crisis management agreements, such as the 'hot line', the

⁴⁶ The classification is based on the outcome of agreements, unlike Schelling and Halperin's categories which focused on goals of crisis stability, arms-race stability and damage limitation.

Agreement on Measures to Reduce the Risk of Outbreak of Nuclear War, and the Agreement on the Prevention of Nuclear War; and restraints on nuclear weaponry, as in the Test Ban Treaty, Non Proliferation Treaty, Strategic Arms Limitation Talks I and II treaties, and Strategic Arms Reductions Talks. The series of treaties and agreements are unprecedented and attest for the relative success of arms control. Chayes argued: "There is no comparable historical example of two leading powers carrying out far-ranging negotiations, extended in time and resulting in mutual agreements regulating the testing, deployment, and force levels of their most important weapons systems" (Cited in Long 1976, 15).

The success of arms control is not to be measured by written agreements alone. The most important control of arms the superpowers have attained, not embedded in any agreement except symbolically in the test ban and non-proliferation treaties, was "the nearly universal belief. . . that nuclear weapons are in a class apart from conventional weapons. They are under a curse, a taboo, despite the awe in which they are held and the prestige they may go with having them" (Schelling 1989,30). Another accomplishment was the actualization of the notion in policy. As indicated by one of the leading thinkers of arms control, Halperin: "When we wrote the book arms control was thought of as utopian; now the revolutionary notion that it might add to security has been accepted"

(Halperin 1989, 31).⁴⁷ Over and above, arms control treaties placed additional psychological and political barriers in the way of outcomes that were unlikely in any case. "By giving formal legal sanction to a set of mutual expectations, the agreements made action (or inaction) on the basis of those expectations more comfortable and reliable for both sides" (Chayes, in Long 1976, 16). Lastly, arms control discussions provided a basis for dialogue between the superpowers, even in periods of cold war hostility and bitter conflicts. They contributed to a continual open channel of communication between the adversaries. This frame enhanced the potential for managing crises and restraining clashes of interests between the superpowers as, for instance, during the events of the October 1973 War in the Middle East (George 1988).

Several lessons can be learned from the experience of arms control negotiations. First, the parties pursued arms control discussions, agreements and policies out of egoistic motivation for the sake of their own national interest, and not for international, ideal or moral causes (Keohane 1984). They cooperated to avoid war that neither side wanted (George 1991). Second, the smaller the issue at stake the more effective was the outcome of arms control process (Jervis 1989). Third, the impact of arms control process on perception of the other, i.e. correction of misperceptions (Jervis 1976), socialization (Haas 1980), learning of the

⁴⁷ See also the selected articles edited by Krepon (1989).

opponent (Nye 1987) and exploring mutual interests, was highly significant. Fourth, the contribution of tacit and informal agreements were undoubtedly as important as formal treaties.

The five-year interim agreement governing offensive weapons that was part of the 1972 SALT I package was succeeded by the SALT II treaty of 1979, which was still not ratified at the invasion of Afghanistan and never had a chance after that. Both sides have so far⁴⁹ avoided going expressly beyond the limits contained in that treaty even though it has no formal standing. This is a powerful demonstration that restraints can be reciprocated without formal obligation. . . . reciprocated restraint may often be as good as formal negotiations and treaties, sometimes better (Schelling 1986, 224).

A similar opinion was expressed by Kenneth Adelman (1985), Director of the Arms Control and Disarmament Agency during the Reagan administration, who stressed that not all arms restraint have to be formalized. Thus, the Soviets tacitly agreed to, and made efforts to, keep a possible confrontation in Europe non-nuclear, although their official stand was to deny this possibility.

⁴⁹ This changed in December 1986, when the U.S. launched a new submarine.

There is an interesting duality embedded in the process of arms control which is derived from the 'armament-first' approach. States that are engaged in arms control negotiations do so for the purpose of tension reduction. Yet, the process of arms control between the superpowers brought about a parallel process of nuclear arms race. The arms race took place at the same time, even because of, agreements were being reached in arms control negotiations. The main reason behind this phenomenon was the characteristic of arms control as aiming at tension reduction not settlements. Thus, during the 1980s the fear of nuclear war increased, despite the growing number of arms control agreements, which is why the superpowers had to resort to disarmament and political settlements. But the two parties had long experience and communication through arms control, a fact that helped in building some mutual confidence and recognizing the need for political settlements and disarmament.

In the regional context, it is interesting to observe whether the adversaries would follow the same path, arms control and arms race first, or they would learn from the experience of the superpowers and will be ready to deal with the tensions between them.

B. Modes of Cooperation

The superpowers often bind themselves to mutually advantageous courses of action through a conscious coordination of policies.⁴⁹ Despite the absence of any central international authority with enforcement ability, and despite the existent security dilemma,⁵⁰ they were able to realize common interests through tacit agreements, formal mutual negotiation, and the creation of international regimes. Cooperation was essential for crisis management and avoidance of acute conflicts.

Prospects for cooperation were described by the application of several 'games' to international politics, such as the chicken game, prisoners' dilemma and stag hunt, that show cooperation as necessary to the realization of mutual benefits. Axelrod (1984) added that in iterated-game situations cooperation is promoted by reciprocity, Tit-for-Tat. "[the actors'] Willingness to cooperate is influenced by whether they believe they will continue to interact indefinitely" (Milner 1992, 474). The quest for reciprocity between the superpowers was stated in their Basic Principles Agreement (BPA) of 1972. Later on, President Reagan approached Chairman Brezhnev saying that the United States was interested in developing "a stable and constructive relationship with the Soviet Union. . . [which must be built

⁴⁹ This description of cooperation as a conscious policy coordination is derived from Oye (1986).

⁵⁰ As defined by Herz (1950) and Jervis (1978).

upon] restraint and reciprocity."⁵¹

An integral prerequisite for cooperation was the cognizance of mutual interests, ones which the superpowers have both strived strongly for, while not harming their other immediate and vital interests. Competitive actors are not likely to cooperate unless both perceive that their interests will be served better by cooperation through unilateral actions (Keohane 1984; Axelrod 1984). Establishing the Hotline and avoiding unintended nuclear exchange were examples of mutual issues, and so was the limitation of nuclear proliferation. George's (1983) analysis suggested that situations of high-interest symmetry, where both sides have a vital interest, tended to lead to regimes of crisis prevention and cooperation. A situation of this kind emerged in Europe, as stated in the Four Powers Agreement on the status of Berlin 1971, and the Helsinki Agreement⁵² of 1975. The vitalness of Europe to both superpowers brought about the creation of three crisis prevention regimes in the continent (Krasner 1983), with stated rules of engagement and accommodation.

1. *International regimes* - International regimes are major tools of expediting cooperation among states. They are defined as sets of norms, principles, rules, or decision

⁵¹ *NY Times*, 23 September 1981.

⁵² The Helsinki Agreement on security and cooperation in Europe emphasized the issues of military transparency and confidence and security building (Williams, in George (1991), 507.

making procedures, around which actors' expectations converge (Ruggie, (1975); Krasner 1983; Keohane 1984). International regimes facilitate cooperation through the functions they perform for states. The main task of regimes is to improve each side's information about the behavior of others, especially about the likelihood of their cheating and actual compliance. As well, they act to change the pattern of transaction costs of cooperating, by reducing "incentives to violate regime principles" (Keohane 1984, 90).

The superpowers established many bilateral and multilateral regimes in order to enhance cooperation and regulate relations. Nevertheless, the successful ones were not in the area of security. General principles were indeed agreed upon in the early 1970's, and they were regarded as providing the foundation for a crisis prevention regime. Yet this regime proved to be abortive in the sense that the superpowers failed to agree upon a joint definition of crisis prevention, did not give more concrete operational meaning to the general principles, or set up a procedural arrangements for implementing their nascent regime (George 1983). Moreover, within a few months of the superpowers' agreement to cooperate in crisis prevention of June 1973, that agreement was subjected to a severe test by the circumstances leading to the outbreak of the October 1973 War in the Middle East, and seemed to fail it and made it anything else but a regime (George 1983).

Regimes of security issues seemed to be hard to

accomplish in the context of superpower rivalry (Jervis, in Oye 1986). Yet, the superpowers were successful in establishing regimes of this kind in Europe. The success was manifested in the Stockholm Agreement of 1986.⁵³ The agreement was designed to ensure that the capacity for crisis prevention through deterrence was accompanied by crisis prevention measures that were "less abrasive and that dealt not with deliberate aggression but with inadvertent war or war through miscalculation or misunderstanding" (Williams, in George 1991, 504). After some years of renewed cold war, President Reagan spoke a day before the Stockholm Conference about the need to establish "constructive cooperation. . . [and] a better working relationship with each other, one marked by great cooperation and understanding" (Goodby, in George 1988, 145). Another notable regime of security concern was the NPT agreement⁵⁴ and its mechanisms, such as the International Atomic Energy Agency (IAEA).

2. *Crisis management and prevention* - Following the establishment of MAD, and the comprehension that war as a Clausewitzian political tool is obsolete, crises became the functional substitute for war.

⁵³ The agreement required at least 42 days advance notice of military maneuvers above certain levels as well as the exchange of annual calendars regarding military activities, provided for observation of notified activities, and inspections of specified areas (Williams, in George (1991, 503).

⁵⁴ The NPT regime, and its effectiveness, is dealt with in the last chapter.

Crises now take on the roles of determining relative power, recelebrating dominance, and distributing contested values. . . . [Nuclear crises are triggered] by differences in estimates of how likely each side is to stand firm, which in turn will be influenced by judgments about the relative importance of the issue to each side and general assessment of each side's willingness to run risks (Jervis 1989, 38).

During the five decades of global competition, the superpowers have learned some fundamental 'rules of prudence' for managing crises and controlling regional confrontations without resorting to force. The basic rule of prudence to which both sides have adhered is that "neither superpower shall initiate military action against the forces of the other superpower" (George 1988, 581).

In order to refrain from dangerous loss of control over a crisis, mostly stem from risk taking, bluffs, bargaining tactics and game of Chicken, arrangements of crisis management and prevention were required. One such case was the Cuban Missile Crisis of 1962, where the leadership in both Moscow and Washington recognized the dreadful consequences of resorting to force and tacitly agreed not to force the opponent 'over the brink', thus the Americans neglected the surgical strike option and avoided shooting of Soviet vessels. Another instance was the October War of 1973, where both

superpowers managed to constrain their allies in the Middle East and imposed a cease-fire.

Both Kennedy and Khrushchev, following the Cuban missile crisis, showed determination to concert efforts in developing some means of tension relaxation and crisis prevention, in order to avoid instability and uncertainty in superpowers' relations. The Nuclear Test Ban Treaty of 1963 was the first substantial move in this direction. The attempt to prevent crises was one of the important objectives of the détente process which started in 1969 and concluded by Nixon and Brezhnev in 1972 (George 1983). This intent was expressed in the Basic Principles Agreement (BPA) of 1972 that pledged the superpowers to crisis prevention,⁵⁵ and in the ensuing agreement on Prevention of Nuclear War of 1973. Yet, one should notice that the superpowers ignored these agreements whenever vital interests were at stake, as occurred prior to and during the October War of 1973 (George 1983). "The general principles agreed to by Nixon and Brezhnev at their two summit meetings played even less of a role in constraining the behavior of the two sides in subsequent crises in Angola and the Horn of Africa" (George 1983, 148). The grounds for the limited attainment of crisis prevention at the time were to be found in the ambiguity of the agreements for cooperation.

With the passage of time it became clear that

⁵⁵ The BPA specified, although vaguely, the desire for a peaceful coexistence, equality, restraint, reciprocity and no unilateral advantage, thus it put the grounds for SALT I.

Soviet leaders believed they had committed themselves to cooperate to prevent only those crises that threatened to result in war with the United States. U.S. leaders, on the other hand, believed that their agreement with the Soviets was a broader one, extending as well to avoidance of crises that were not war-threatening (George 1983, 368).

Nevertheless, it seems that both sides were cautious in time of crisis. McGeorge Bundy, Kennedy's adviser on national security affairs, disclosed:

In the White House at the height of the [1961 Berlin] crisis there was a greater interest in . . . compromise than Kennedy ever chose to show publicly. On August 28 I reported to him the growing belief among those at work on our negotiating position that we can and should shift substantially toward the acceptance of the GRD, the Oder-Neisse Line, a non-aggression pact, and even the idea of two peace treaties (Bundy 1988, 271).

Even during the course of the October 1973 War, when the superpowers' leaders practically ignored crisis prevention agreements, they still showed restraint and caution and acted to cooperate in managing the crisis. Two weeks after the outbreak of war, Nixon wrote to Brezhnev:

The Israelis and Arabs will never be able to approach the subject by themselves in a rational manner. This is why Nixon and Brezhnev, looking at the problem more dispassionately, must step in, determine the proper course of action to a just settlement, and then bring the necessary pressure on our respective friends for a settlement. . . . (Quandt 1977, 551).

Nixon then sent Kissinger to Moscow to work out arrangements for cease-fire (Kissinger 1982).

The superpowers decided to put together confidence building measures (CBM) in order to avoid crises and unwanted conflicts as much as possible. CBMs are arrangements "designed to enhance such assurance of mind and belief in the trustworthiness of states and the facts they create" (Holsti 1983, 2).⁵⁶ Confidence-building measures between the superpowers were stated in the Helsinki Agreement on Security and Cooperation in Europe, and became a prime aim of the Stockholm Conference. Prior to the conference, the Soviets accepted the need of confidence-building measures, by stating "we are serious about them."⁵⁷

⁵⁶ See also other definitions offered by Alfred (1979), and Chossudovsky (1984).

⁵⁷ General Secretary Yuri Andropov, speaking in the Kremlin on 21 December 1982. Cited in George (1988, 148).

C. Peace Through Accommodation

The superpowers came out of World War II as allies and turned out to be bitter rivals in a state of cold war. Yet, the United States and the Soviet Union had managed to avoid war in their relationships. The 'modus vivendi' (Rice, in George 1988) that emerged allowed for managing the intense political rivalry without resorting to force. Lewis Dunn of the U.S. State Department, argued:

The stakes of the Soviet-American confrontation remained limited even at the height of the Cold War. Neither country sought to challenge the territorial integrity or political interdependence, let alone the physical survival, of the other. Despite periodic East-West crises from the late 1940s to the early 1960s. . . neither superpower believed that recourse to military force and the risk for escalation to a nuclear exchange were justified (Dunn 1982, 18).

There are several factors that impeded cooperation between the superpowers, thus interrupted the informal peace (George 1983). First, the security dilemma of states, stemmed from the anarchical character of international order (Waltz 1979; Jervis 1978), enhanced conflicts of interests and potential threats, encouraged the arms race and reduced readiness to cooperate with the enemy. Second, opposing ideologies created an idealized self-image among leaders and

public alike, as well as invidious image of the enemy, and strengthened misperceptions among the belligerents (Jervis 1976). Third, cooperation in security matters was heavily constrained by a variety of pervasive uncertainties, ones which exacerbate superpowers' military competition and affected arms control efforts (Downs 1985). On the contrary, there are those factors that favor security cooperation, such as the desire to curb the security dilemma, fiscal burden of arms race, and skillful leadership.

The two rivals have chosen to accommodate and learned to manage crises by means short of the use of force (Harkabi 1983). The diplomatic efforts to loosen tensions and avoid direct military confrontation may be referred to as *peace through accommodation* (Morgenthau 1973). The tendency to accommodate in order to enhance stability was a major element of superpowers' relationships during the 1970s. The two sides agreed that conflicts of interests should be negotiated in the 'spirit of mutual accommodation' (George 1983).

The basic rule of prudence to which both sides have adhered in order to avoid war was:

Neither superpower shall initiate action against the forces of the other superpower. . . [and] neither superpower shall exploit its advantage in a crisis to impose on the other a policy dilemma between backing down in defeat or desperately initiating the use of force (George 1988, 583).

As well, the superpowers respected each other's sphere of influence and vital interests, and restrained their allies accordingly.

Deterrence relations between the superpowers, in the course of time, led to 'nuclear peace'.⁵⁸ It has been imposed on the international system by the factors of capability heretofore mentioned, and reinforced by three additional sets of factors.

Structural factors - In a bipolar international system, where the interests of the superpowers are worldwide, each superpower's sphere of influence was vast and mostly conceded. Although neither side has ever publicly endorsed the rival's right to a sphere of influence, neither has ever directly challenged it either (Gaddis 1986). Moreover, where the relation of particular areas to spheres of influence had been left unclear, such as in Berlin, South Korea and Cuba, the superpowers had attempted to exploit the situation, yet with caution and without risking war if resistance was encountered (George and Smoke 1974).

Nevertheless, bipolarity was the main structural reason⁵⁹ behind stability in the system: centers of power in the system were clear; identification of ally-foe was obvious; the structure was simple and forwent the complexity of previous

⁵⁸ Defined by Harkabi (1983) as a situation of 'no-war' which was dictated by the balance of terror.

⁵⁹ In accordance with Waltz (1979) and Gaddis (1986), and counter to Morgenthau (1973) and Wright (1965). The pattern of capability, another structural cause, was dealt with earlier.

European balance of power systems; leaders⁶⁰ were induced to show caution and restraint, and were forced "to act internationally in ways better than their characters may lead one to expect" (Waltz 1979, 176); alliances were more stable due to their minor relevancy to the real balance of power,⁶¹ and defection of any state from the alliance had marginal effect.

The superpowers mutual independence, as well as their geographical remoteness from one another, "has provided little opportunity for the emergence of irredentist grievances comparable in importance to [other] historic disputes" (Gaddis 1986, 112), and left only minimal friction points between them. Although the superpowers were involved in conflicts, indeed they have fought three major limited wars since 1945,⁶² they both refrained from direct contact, and participated indirectly, by proxies. "Clients and proxies have come to serve as buffers, allowing Russians and Americans to pursue their competition behind a facade of *deniability* that minimizes the risks of open--and presumably less manageable--confrontation" (Gaddis 1986, 135). In those cases where the superpowers' soldiers have encountered one another directly⁶³ "great care was taken on both sides to avoid incidents that

⁶⁰ Regardless of their idiosyncratic elements.

⁶¹ Actually, alliances which are formed to increase power have become 'security umbrellas' and 'blocs of ideology'.

⁶² Korea, Vietnam and Afghanistan.

⁶³ Such as in Berlin, 1948 and 1961, and Cuba, 1962.

might have triggered hostilities" (Bell 1971, 199). Furthermore, from the mid-1960's relations of détente moderated most conflicts in the international system.

Historical factors - The superpowers had poor motivation for direct clash, initially due to the dread experience of World War II, especially its nuclear hazardous experience. The lack of territorial conflict between them enhanced the tendency to avoid direct confrontation. In addition, both superpowers enjoyed responsible decision making units with developed nuclear awareness.

Political factors - The lack of political and strategic distress and a fairly balanced equation of political interests in the superpowers' relations, while mutually respecting each other's vital interests, enhanced stability in the system (Morgan 1977). In each of the superpowers' confrontations the balance of political interests clearly favored one side, thus the challenger of the status quo recognized the outweighed interest and retreated (Osgood 1967). In addition, ideological aspirations were moderated before the nuclear reality.

The elite in both superpowers underwent a process of 'nuclear socialization' or 'nuclear learning'⁶⁴ (Nye 1987), in regard to utilizing and thinking about nuclear weapons. "Awareness of newly understood causes of unwanted effects often results in the adoption of different, and more

⁶⁴ Alteration of national interests through a cognitive change.

effective, means to attain one's ends" (Haas 1980, 390). The fact that statesmen had direct evidence of what nuclear weapons can do when used against human beings (Mandelbaum 1981), and the 'crystal ball effect' which allows leaders to foresee the consequences of nuclear exchange (Carnesale 1983), contributed to the leaders' awareness of the realities of war and supported their nuclear learning.

Nye referred to several aspects of the superpowers' nuclear learning. First, there was a recognition of assured destruction, "Even though we still have doctrinal differences about its desirability or the effectiveness of long-term efforts to escape it by building perfect defenses" (Nye 1987, 383). The second aspect was command and control of nuclear arms, and learning the danger of escalation, thus assigning more elaborated technical and political procedures to the use of arms. Thirdly, better scientific knowledge and diplomatic experience has changed attitudes and policies towards nuclear proliferation. Fourthly, arms race and diplomatic experience has taught the belligerents the interaction of force-structure choices, acceptance of parity and offense-defense link, and of surveillance. Hence, "both seem to have learned the practice of formal arms control negotiations. . . learning and convergent knowledge did lead to explicit, albeit limited, cooperation (Nye 1987, 385).

The major effect of nuclear learning on both superpowers was the developing awareness of nuclear weapons as weapons of non-use and deterrence. This amended perception was expressed

by Presidents Reagan and Gorbachev, in their joint statement following their 1985 summit:

A war cannot be won and must never be fought. Recognizing that any conflict between the Soviet Union and the United States could have catastrophic consequences, [the sides] emphasize the importance of preventing any war between them whether nuclear or conventional.⁶⁵

A vital role was played by the fear of escalation in times of crisis. Facing the enormous nuclear destructive power, the superpowers had not shown the same willingness to risk war that has existed at other times in the past. As President Kennedy stressed during the Cuban Missile Crisis of 1962 "it isn't the first step that concerns me, but both sides escalating to the forth and fifth step--and we don't go to the sixth because there is no one around to do so" (Kennedy 1969, 98). George (1983) argued that during previous crises, such as in Korea, Hungary, Suez, and the Middle East, the two sides learned 'de facto rules of prudence', and pursued the development of crisis management methods. When the cost of seeking excessive gains in an increased probability of total destruction, moderation made more sense. Jervis (1988) supported this trend and argued that during conflicts each side was willing to make concessions to avoid venturing too near the brink of war. Gaddis explained that the mere

⁶⁵ *NY Times*, 22 November 1985, A12.

development of nuclear capability,

Has served to discourage the process of escalation that has, in other eras, too casually led to war. They have had a sobering effect upon a whole range of statesmen of varying degrees of responsibilities and capabilities. They have forced national leaders, every day, to confront the reality of what war is really like, indeed to confront the prospect of their own mortality (Gaddis 1986, 123).

To conclude, one could not disavow the fact that for the last five decades there has been no war, no shooting, and no clash of any kind directly involving the militaries of the superpowers against each other. Even at the peak of the Cold War, the superpowers refrained from imposing direct threats on the existence and integrity of the other. The nuclear reality, and the means of mutual nuclear deterrence, have imposed 'Pax atomica' (Harkabi 1983) on the two rivals. Harkabi stated that this was not the peace that mankind has desired, the ideal peace of brotherhood and justice. Rather,

[It is] Peace in the shadow of terror. It is not the result of man's progress, the ascendancy of his spirit, or the perfection of his institutions. It is pacifism for lack of alternative. This is. . . peace imposed by technology, a peace from which a great violence has indeed been removed but which

exists by virtue of latency of violence (Harkabi 1983, 251).

George added fear and luck as factors which helped statesmen in avoiding nuclear war:

From the beginning of the Cold War, the leaders of both countries have generally behaved with enough caution, prudence, and good sense--and, one may add, with an indispensable element of good luck--to survive a series of tense confrontations in Berlin, Cuba, the Middle East, and Asia without plunging into war. The shared fear that such crises could get out of hand and result in catastrophic nuclear war has provided powerful motivation in both Moscow and Washington for restrained behavior and tacit cooperation in managing their confrontations (George 1991, 3).

The nuclear peace is based on coexistence. Due to the absence of written peace contract, there is no treaty to break or agreement to withdraw from. The validity of the nuclear peace stems from the superpowers' nuclear capability (Weltman 1980) and their mutual supreme interest of avoiding war, since war means for them a mutual annihilation. "[Nuclear weapons] make the cost of war seem frighteningly high and thus disclosure states from starting any war that might lead to the use of such weapons" (Waltz 1981).

CHAPTER 4

NUCLEARIZATION IN THE MIDDLE EAST

I. Trends of Regional Nuclearization

Trends of regional nuclearization may be described in two ways. The conventional approach describes going nuclear as the acquisition of nuclear weapons by states that had not previously had them, and the declaration of this possession through a performance of a nuclear test and adoption of an overt nuclear deterrence posture (Spector 1990; the NPT). The second approach shifts attention to the process of going nuclear, the acquisition of capability to make a nuclear device. It concerns the gradual build-up of nuclear infrastructure and evolution of nuclear thinking and consciousness, even though the weapon is not necessarily completed and tested (Schelling 1976; Kapur 1979). This study adopts the second approach for the analysis of horizontal nuclear proliferation. The rationale that leads to this choice is the "silent spread of nuclear arms" (Spector 1990). No new country has openly declared that it has nuclear arms since 1964, when the PRC (China) joined the USA, USSR, Britain and France as the fifth country to announce that it possessed such weapons. Much the same, since India's nuclear detonation

in 1974, no country is known to have tested a nuclear device for the first time, nor has India conducted further tests. This is so, in spite of the common assumption that many other states gained nuclear capability.

The incentives for going nuclear are mostly connected to political, security, economic and prestige considerations (Kapur 1979; Epstein 1977; Meyer 1984). Nuclear arms could facilitate the deterrence of a potential nuclear enemy; neutralize the enemy's conventional military superiority; create ambiguity in the enemy's calculations; convince him to halt his nuclearization; gain international, regional or domestic prestige; influence foreign policy making; reduce dependence on a power; and materialize technological and scientific advancements. Yet, once the decision to go nuclear has been taken, and nuclearization has been embarked on, the state is considered a Secondary Nuclear Power (SNP), since the only barrier between the state and nuclear weapon is time (Schelling 1976).

The definition of SNPs may be seen as vague, since it depreciates the time factor. To be recognized as a SNP means that well informed governments think that a country has the capacity to nuclear bombs within a relatively brief period of time. Thus, it may be argued that knowing a country is developing nuclear capability (Iraq) is not the same as knowing that a country already has the capacity (Pakistan). And embarking on nuclearization may be seen as not enough to be considered a SNP. Nevertheless, this study preferred not

to include the time factor into the definition of SNP. This is because once the political need was recognized, governmental decision was made, and policy implemented, the country would have a control on the time factor. It may exhaust itself economically in arms race with its adversary, as did the Soviet Union, it may try to purchase available nuclear materials and know-how instead of developing them, as partially done by Iran and Iraq, or it may develop nuclear capability in a slower pace, as did India.

Hence, the political distress defines the time factor. States in great political distress could get nuclear umbrella or guaranties from another nuclear power while they develop their own nuclear capability. This is why one should identify the decision to go nuclear and focus attention on the process of nuclearization, while incentives and causes remain secondary.

The decline of the Soviet Union and the Eastern bloc, together with the conclusion of the Cold War and superpowers' confrontation, had little influence on trends of nuclear proliferation. Moreover, conflicts in Third World regions abound. Many regional rivals, as claimed by Dunn (1991) are fielding sophisticated conventional weapons, especially ballistic missiles, and unconventional weapon proliferation is well under way. The Gulf War discoveries⁶⁶ revealed the common

⁶⁶ U.N. inspections after the war revealed that despite the IAEA supervision, Iraq had a well developed nuclear program and may have been within a few years of possessing nuclear weapons.

suspicions about the silent spread of nuclear capability in Third World countries. The knowledge and readiness of nuclear production in the Third World is more common today, and many states are likely to follow the presumed Israeli model of unacknowledged nuclear deployment. The breakup of the Soviet Union into smaller units added the threat of emerging 'instant' nuclear powers (Dunn 1991). Thus, despite the withdrawal of some states⁶⁷ from further nuclear arms development, proliferation in conflictive regions is moving forward. The concern here is laid upon dyads of SNPs in conflictive regions, where small nuclear arsenals of nuclear dyads on the one hand, and the concentration of national assets in a few urban areas on the other, are liable to result in 'decapitating' strikes. "That is, a small number of weapons will be launched against the few vital population centers of an antagonist. . . . [And for that] The regular air forces of the Third World are serviceable" (Rubin 1991, 32).

The analysis of the two following regional cases is organized in four layers: nuclear capability; second strike capability and vulnerability; political implications of nuclearization; and trends of cooperation and moderation.

⁶⁷ South Africa, Brazil and Argentina.

II. The Middle East As a Subordinate System

Nuclear ambitions had been introduced to the Middle East during the late 1940s, as early as the period when the major states were born and conflicts stimulated. In Israel, the interest in nuclear utilization came together with the independence of the state in 1948, when the Research and Planning Branch was set up in the Defense ministry, and in 1952 the Atomic Energy Commission was founded (Jabber 1971).

As a conflict-prone region of great importance and centrality in the global agenda, the Middle East stands at the core of the debate on nuclear proliferation. Because of the large economic and political assets at stake, there is much interest in assessing the possible outcomes of nuclearization in the Middle East, whether it is liable to lead to an all-out war that would escalate into global confrontation or to enhance cooperation and moderate conflicts. As such, this region is chosen as the first case to be analyzed and compared to the superpowers' experience.

The basic assumption here is that nuclearization in the Middle East is unavoidable. Due to the special characteristics of nuclear reality, the potentially hazardous nuclear future, and the deep involvement of world powers, it is more likely that caution and mutual restraint will be reinforced by nuclear proliferation. Hence, nuclearization may encourage measures of arms control and cooperation in avoiding the undesirable and in encouraging peace through accommodation

'in the shadow of terror' (Harkabi 1983).

Prior to any investigation of nuclear trends in the Middle East, it is required to define the political context in the region. The following systemic description illuminates the structural and behavioral patterns that shape Middle Eastern politics and will assist in understanding the political motives of states to go nuclear.

The Middle East, as a subordinate system,⁶⁸ has its own structure and behavioral patterns that organize interactions among actors. The organizing principles are conflicting interests and discordant ideologies. As a sub-system, it is characterized by three distinguishing elements. The first is a multipolar configuration of power, when power is determined by military and economic strength. Second, there are identifiable patterns of political interactions over time. Third, the region is characterized by its boundaries.⁶⁹ The Middle East is a system in a state of a dynamic equilibrium: a state of strong conflicts, shocks and clashes on the one hand, but without a significant transformation in its typical elements as a sub-system (Cantori and Spiegel 1970).

The multi-polarity of the Middle Eastern sub-system is

⁶⁸ By 'subordinate system' we refer to a region which forms a unit of the international system. The unit is defined not only by the geographical proximity but also by the states' interactions (Cantori and Spiegel 1970; Thompson 1973).

⁶⁹ In this sub-system boundaries are a problematic issue. Actors which are geographically outermost to the system occasionally penetrate the system politically and religiously.

determined by the distribution of capabilities among many actors. The multi-polarity of power has remained relatively fixed over the years. Israel maintains a continuous superiority of power in relation to the combined neighboring Arab powers, and enjoys a well established American backup. Among the Arab countries, Egypt is ranked as the first Arab power, with Iraq and Syria trailing behind it (Ismael 1974). Saudi Arabia is considered a power thanks to its economic strength, and Iran is regarded as a power because of both its economic and military potential.

Six patterns of interactions among the actors are recognized by Evron (1973):

1. Political interactions are of high intensity with a common use of force. There were 12 major wars in the last five decades and numerous border clashes and interventions around the region.
2. Interactions among actors are of conflictive and cooperative nature, sometimes simultaneously. For example, Egypt and Syria have shifted from a tight alliance in the 1960s to a rivalry and rupture of relations in the late 1970s.
3. There is a tendency of limited unity in the Arab world, as in the Arab League and temporary cooperation among the confrontation states against Israel.
4. There is a trend of hierarchical struggle in the Muslim world in the Middle East, mostly among Egypt, Syria, Iraq and lately Iran. Additionally there is a dominance rivalry between the reactionary states led by Saudi Arabia and lately

Iran and the radical forces in Egypt (under Nasser), Syria, Libya and Iraq.

5. Most political processes are short term. Wars tend to come to a fast conclusion, usually without an impact on the sub-system configuration (with the exception of the Iran-Iraq war), and alliances last mostly for short terms.

6. There is an intense activity by powers and superpowers. France and Britain ruled parts of the Middle East and were deeply involved during the 1950s and 1960s. They even intervened militarily in the 1956 war between Egypt and Israel. The superpowers perceived the region as an area where they had vital interests which called for a deep involvement, on the one hand, and preserving the status-quo, on the other. All the regional actors enjoyed the support of one of the superpowers at a time.

The Middle East regional interactions determined its structure and boundaries in three different rings: the core ring--Israel and the Arab confrontation states, usually Egypt, Syria, Jordan and Lebanon--where the interactions are most intense and significant; the Arab ring includes all Arab countries and shows a lesser extent of conflicts and alliances; the Muslim ring includes all Muslim countries, such as Iran, and those countries which are geographically located at the outermost borders of the region, such as Algeria and Pakistan.

In light of the above, one may characterize interactions in the Middle East as revolving around two types of conflicts,

which may be considered as organizing principles. First, regional politics are permeated by conflicts of national interests, primarily pivoting around the Arab-Israeli conflict and the inter-Arab hegemonic competition. Second, interactions are influenced to a large extent by four sets of conflicting ideologies. These are the rivalry between Arab nationalism and Zionism, the inner Arab traditional-radical tension, the fundamentalist-secular struggle both within the Muslim world and between the Muslims and the West (as represented by Israel and the U.S.), and the religious conflicts between Christian and Muslims, Shiite and Sunis, and Muslim and Jews.

The Arab-Israeli conflict stands at the core of Middle Eastern politics. Although the conflict has strong ideological and religious phases, Arab nationalism versus Zionism and Islam versus Judaism, it is rooted in a deep conflict of national interests. The issues at stake are territory, prestige, and rights of self-determination. The conflict is accelerated by the security dilemmas and by arms races. Thus, clashes, wars, and bloodshed were inevitable outcomes.

In the Arab world, the political interests of states are by far the leading cause for both cooperation and competition. Ideology is emphasized as the reason but is mostly a catalytic agent (Ismael 1986), while political interests limited the scope and duration of conflicts and alliances alike. Thus, Egypt and Syria were able to cooperate in fighting with

Israel, and at the same time compete over Arab hegemony. Iraq cooperated with Iran, Saudi Arabia and Kuwait on economic issues, yet fought with them when other political interests were at stake. Regardless, the Arab world was able to join together in formal institutions, for ad hoc purposes, and against a mutual threat such as Israel.

Although the ideology of most Arab regimes strongly committed them against Israel, their political interests prevented the Arab world from a successful cooperation (Sela 1983). Therefore, Jordan did not join Egypt and Syria in the 1973 war, Egypt did not cooperate with Syria and the Palestinians in the 1982 war in Lebanon, and Egypt left the confrontation states for signing a peace treaty with Israel in 1979. Yet, Arab countries might all have strong incentives to join forces against Israel under some extreme circumstances.⁷⁰ In a case of an acute ideological clash, one may expect unity of Arab powers (Heikal 1975), or even of Muslim powers including regional invaders such as Pakistan (Dietl 1983; Krosney 1981). Evron (1979) argued that in an event of nuclear proliferation in the region, nuclear capability will be acquired by many Arab states at the same time, or in short time intervals, and an anti-Israel coalition is probable. Similar concerns were recently expressed in Israel by General Shlomo Gazit, then chief of Israeli Defense Forces (IDF) intelligence, who warned of a nuclear Muslim or Arab

⁷⁰ In the past, such circumstances were Israel's declaration of independence, Pan-Arabism and Nasser's leadership.

coalition.⁷¹ This cooperation is probable in light of the dominance of Islam in the region and beyond it.

When analyzing the prospects of nuclearization in the Middle East, one should take into consideration the possibility of a wide Muslim coalition around the 'Muslim bomb' (Krosney 1981). Pakistan⁷² is widely mentioned as a possible Muslim nuclear leader or ally against Israel. Inasmuch as Pakistani involvement seems to be a remote case, one should note that President Zia ul-Haq referred to Pakistan's nuclear efforts as 'the Islamic bomb', and also received funds from Libya, Saudi Arabia, and Iran for this project (Krosney 1981). Moreover, Zia ul-Haq promised implied Pakistani nuclear guarantees to some Arab states⁷³ (although the pledge was lost after his decease). An influential Egyptian editor went further and urged Arab leaders to find a way to utilize the Pakistani bomb for deterring Israel.⁷⁴ Saudi publications called for seeking nuclear support from Pakistan, although without mentioning the form of this support.⁷⁵

⁷¹ *Yediot Aharonot* (Tel Aviv), 12 July 1992.

⁷² The Pakistani case will be dealt with in the succeeding chapter (India-Pakistan).

⁷³ Saudi Arabia, Jordan and Egypt.

⁷⁴ *Sabah-Al-Heir* (Cairo), 23 April 1987 - Hazav Daily Collection of published Arab Information Translation, 28 April 1987. Translations of Arab sources are henceforward taken from the HDCI.

⁷⁵ *Ukaz* (Riad), 19 February 1985; "Interview With President of Pakistan", *Ukaz*, 1 July 1985; *Al-Magla* (Riad), 27 November 1985.

III. Nuclear Capability and Delivery Systems

Nuclear programs are implemented in the Middle East by many states. The best results have been achieved by Israel and Iraq, while Iran, Egypt, Libya, and Algeria are making progress. In all states nuclearization is a clandestine operation which is regularly titled 'peaceful nuclear programs'. One should realize that the difference between 'peaceful' and 'non-peaceful' nuclear programs is quite vague. Once the state acquires nuclear capability, it is able to move from a 'peaceful' to a 'non-peaceful' program in a matter of a political decision and few technical steps. Indeed, nuclear programs in most Third World countries, i.e., India, Israel, Iraq, Pakistan, were all initiated as 'peaceful' programs, in order to satisfy international public opinion. Some European states, as mentioned earlier, have initiated nuclear programs and politically decided to refrain from developing the bomb, thus utilizing nuclear power for peaceful purposes. Yet, these states are capable of producing nuclear weapons after making a political decision. As hereafter discussed, the highly advanced delivery systems in the possession of most regional actors makes it hard to believe that the nuclear programs in the Middle East are peaceful.

None of the regional actors has overtly chosen to introduce nuclear weapons into its foreign policy and deterrence posture. Nevertheless, the nuclear dimension is strongly involved in regional politics.

The proliferation of ballistic missiles is related to the

spread of nonconventional ordnance. The use of ballistic missiles armed with conventional warheads is quite limited in war and has a small psychological effect at most, as experienced during the Gulf war of 1991. Yet, when armed with nonconventional warheads they can be used more effectively both for military use and deterrence. Therefore, when a state obtains ballistic missiles it is likely to develop chemical and nuclear capability (Navias 1990). Spector stressed that none of the emerging nuclear states, like Israel, India, Pakistan, and South Africa, that has acquired the ability to manufacture nuclear weapons has been content to limit itself to a rudimentary nuclear arsenal consisting of a small number of aircraft-deliverable nuclear fission bombs. "[Aside from] Expanding the size of their respective potential nuclear weapons stockpiles, all are also attempting to develop missile-based delivery systems. . . all aspire to more advanced capabilities" (Spector 1990, 10).

The Gulf War of 1991 focused attention on ballistic missiles capable of carrying nuclear warheads which in part are built or modified by regional actors.⁷⁶ The danger of ballistic missiles derives from their ability to attack distant targets with a rapidity that in many cases precludes warnings (Navias 1990). Moreover, ballistic missiles are very

⁷⁶ In the war Iraq used the Al-Hussein missiles, a version of the Scud-B modified to achieve longer range.

difficult to be intercepted once in flight." And in the Middle East most actors possess ballistic missiles. "The most concentrated area of [missile] proliferation is centered in the region stretching from the Levant to the Maghreb, where Iran, Iraq, Saudi Arabia, Kuwait. . . Yemen, Syria, Algeria, Israel, Egypt and Libya all possess ballistic missiles" (Navias 1990, 7).

Nuclear programs are implemented in many states in the Middle East. The most advanced programs are taking place in Israel, Iraq, Iran, and to a lesser extent in Egypt, Syria, Libya and Algeria. An appraisal of the nuclear capability of these states follows.

A. Nuclear Potential of Middle Eastern Countries

Israel: The state of Israel has never acknowledged its nuclear program. As early as 1963, when the Dimona nuclear reactor became operational and international concerns arose, the Israeli government described the suspect facility as a 'textile plant' (Quester 1983). Yet, there is no reason to question the widely held belief that Israel acquired nuclear weapons (Dunn 1991; Spector 1990; Barnaby 1989). In testimony

⁷⁷ The most advanced American Patriot missiles were stationed both in Israel and Saudi Arabia and failed in most cases.

⁷⁸ Israel, Iraq and Saudi Arabia obtain missiles with a range greater than 900 km, ones that can reach any point in the region.

before Congress, William Colby, the outgoing Director of the CIA in 1975, deposed that Israel had clandestinely diverted fissionable material and was well on the way to manufacture a nuclear device.⁷⁹ This belief was enhanced by the 1976 CIA report which asserted that Israel had a stockpile of 10-20 deployed nuclear weapons,⁸⁰ and was confirmed by the revelation of former Israeli nuclear technician Mordechai Vanunu.⁸¹ On the basis of the latter revelation, the nuclear physicist Frank Barnaby (1989) estimated the Israeli nuclear arsenal to contain 100-200 nuclear warheads, an estimate duplicated in a Soviet intelligence report.⁸² Spector (1990) too assessed that since the year 1982 Israel has built 'boosted' weapons which rely on H-bomb principle.

The Israeli nuclear program was promoted by France which supplied Israel with its Dimona nuclear reactor. The reactor is estimated to have a power output of 24 mega-watts⁸³ (Harkavy 1977; Potter 1988). In 1953 Israel reached an agreement for nuclear cooperation with France (Goldschmidt 1964). Israeli-French nuclear cooperation were described by Crosbie (1974) as

⁷⁹ *Jerusalem Post* (Jerusalem), 25 November 1975.

⁸⁰ See *Washington Post*, 15 March 1976; *NY Times*, 16 March 1976; "How Israel Got the Bomb", *Time*, 12 April 1976.

⁸¹ "Revealed: The Secrets of Israel's Nuclear Arsenal", *Sunday Times* (London), 5 October 1986.

⁸² *Yediot Aharonot*, 25 February 1993.

⁸³ A reactor of this size could produce some 6 kg of plutonium, enough for a little more than one Nagasaki-size bomb annually. The calculations are provided in Jabber (1971).

a 'tacit alliance'. This alliance was intensified by their military cooperation during the 1956 Suez War against Egypt. It enabled Israel to gain access to technical data and information, to train its scientists at advanced nuclear installations, and to profit from the experience of France's early work in the nuclear field (Reiss 1988; Jabber 1971). Israel also received U.S. assistance under the agreement of 1962 for cooperation on the civilian uses of atomic energy. The agreement was followed by the building of Nahal Soreq Research Establishment, placed under American and IAEA inspection (Reiss 1988).

Israel has never conducted a declared nuclear test. Nevertheless, "It has been widely assumed that the country's undeclared nuclear arsenal has been developed, in part, through the testing of non-nuclear components and computer simulations--and through the acquisition of weapons design and test information from abroad "(Spector 1990, 156). Israel received data from the first French nuclear test in 1960"⁸⁴ (Krosney 1981), and from U.S. tests (Spector 1990).

Israel's capability of delivering the bomb to its target is the most accomplished in the region. The efficiency of its skillful air force is widely acknowledged, and its region-wide range has been proven in many instances in the past.⁸⁵ As well, the regional balance between air capability and air

⁸⁴ "France Admits It Gave Israel A-Bomb", *Sunday Times*, 12 October 1986.

⁸⁵ For example, the bombing of Iraqi Osiraq reactor in 1981.

defense systems tends sharply toward the former, not to mention the high penetrability to missiles of the involved states (Hohenemser in Melman 1962). Air force superiority was demonstrated by Israel in 1967 in a complete surprise attack, in 1973 after a bloody duel with air defense systems, and in 1982 over Lebanon. Hence, nuclear delivery does not necessarily require any special systems.

Nevertheless, Israel manufactures surface-to-surface missiles capable of carrying nuclear warheads,⁸⁶ and is involved in orbiting space satellites.⁸⁷ The U.S. Arms Control and Disarmament Agency has verified that an Israeli Jericho-2B missile was successfully tested for a range of 1500 km with 750 kg payload.⁸⁸ A possible modification may serve as a ballistic missile with a range of 3200 km and 1000 kg payload (Inman 1990).

Israel has never officially admitted the possession of nuclear weapons. Yet, many Israeli officials have confirmed, deliberately or impulsively, the existence of nuclear capability. It was reported that during the 1973 October War Israel had 13 atomic bombs ready for use on jets and missiles.⁸⁹ President Ephraim Katzir, a former chief atomic scientist, revealed in 1974:

⁸⁶ "U.S. Documents Cites Israeli Missile Progress", *Washington Times*, 15 November 1989.

⁸⁷ *Ma'ariv* (Tel Aviv), 19 September 1988.

⁸⁸ *New York Times*, 1 April 1986.

⁸⁹ "How Israel Got the Bomb", *Time*, 12 April 1976.

It has always been our intention to provide the potential for nuclear weapons development. We now have that potential. We will defend this country with all possible means at hand. We have to develop more powerful and new arms to protect ourselves.⁹⁰

In 1976, Israel's former Minister of Defense Moshe Dayan remarked that Israel was now capable of producing nuclear bombs, and that Israel had to have that capability before the Arab countries.⁹¹ Later, Dayan was quoted to say:

We are not going to be the first ones to introduce nuclear weapons into the Middle East, but we do have the capacity to produce nuclear weapons, and if the Arabs are willing to introduce nuclear weapons into the Middle East, then Israel should not be too late in having nuclear weapons too.⁹²

In 1986, Major General Amnon Shahak, chief of Israeli Defense Forces (IDF) Intelligence, stressed that one reason the Arab states know they cannot annihilate Israel is because "the Arabs believe Israel also has unconventional power."⁹³

⁹⁰ Cited in *Ma'ariv*, 2 December 1974; *Time*, 3 December 1974.

⁹¹ *Sunday Times*, London, 14 March 1976.

⁹² *International Herald Tribune*, 25 June 1981.

⁹³ *Yediot Aharonot*, 24 December 1986.

As the Arab-Israeli conflict traditionally stands at the core of Middle East politics, many Arab countries strived to obtain nuclear capability. This race also went on to serve them for reaching dominance in the Arab world (Iraq and Iran, although the latter is not an Arab country). The most advanced nuclear program and delivery system were found in Iraq.

Iraq: The Gulf War of 1991 has postponed the Iraqi clandestine nuclear program for the second time.⁹⁴ The U.N. Special Commission and the IAEA began to remove, render harmless or eliminate Iraq's nuclear materials and equipment, including stocks of highly enriched uranium, gas centrifuges and electromagnetic uranium enrichment machinery, and are monitoring Iraqi activities (Albright 1991).⁹⁵ In spite of the U.N. inspection, Iraq is suspected to have hidden nuclear materials, such as enriched uranium, which might serve for future nuclear plans.⁹⁶ Iraq also holds on to a well developed nuclear know-how: scientists, engineers and technicians who provided the core of the Iraqi program and are available for future employment.

Iraq's clandestine nuclear program started in the 1960s,

⁹⁴ The first setback on Iraq's nuclear program was forced by the Israeli raid on Osiraq reactor, 7 June 1981.

⁹⁵ Also see *Nucleonics Week* magazines of August 1991.

⁹⁶ "U.N. suspects Iraq has a 4th A-plant", *NY Times*, 3 October 1991; "US is building up a picture of vast Iraqi atom program", *NY Times*, 27 September 1991.

when it received its first small Soviet reactor and joined the NPT in 1969 (Evron 1987). Its nuclear program was later enhanced by purchasing the Osiraq nuclear research reactor from France in 1976 (Spector 1990). During the late 1970's Iraq secretly purchased nuclear materials, such as natural uranium, and components for its Osiraq reactor.⁹⁷ The nuclear program was delayed to a large extent during the war with Iran 1981-1988, and was 'actively pursued' in 1989 (Admiral Brooks, cited in Spector 1990, 191). Frankel⁹⁸ stated that Iraq was developing a nuclear warhead and a missile to carry it. The Gulf war of 1991 and the succeeding U.N. inspections⁹⁹ revealed Iraq's nuclear program. The reports made it believable that the Iraqis had a sufficient amount of enriched uranium, "Perhaps enough to make one or two bombs."¹⁰⁰ This assumption is drawn from Dr. David Kay's report,¹⁰¹ based on a testimony of an Iraqi nuclear scientist who surrendered himself to U.N. forces. In the light of information, Dr. Kay later argued that the probability of Iraq's having a bomb is "a real

⁹⁷ "U.S. Says Italy Sells Iraq Atomic Bomb Technology", *NY Times*, 18 March 1980; see also *Energy Daily*, 2 October 1980.

⁹⁸ Glenn Frankel, "Iraqi Said Developing A-Weapon", *Washington Post*, 31 March 1989.

⁹⁹ See U.N. report published in *NY Times*, 14 September 1991.

¹⁰⁰ *The Washington Post*, 19 July 1991, A20.

¹⁰¹ *Sunday Times*, 24 November 1991.

possibility, one which requires a deep investigation."¹⁰²

Furthermore, it was reported that Iraq is in possession of 46,000 chemical warheads, has conducted tests of biological weapons, and possesses 460 tons of uranium as well as 13 kg of enriched uranium.¹⁰³ Gilboa¹⁰⁴ claimed in 1991 that Iraq did not possess a nuclear device at this stage, yet he stressed its nuclear potential. He anticipated the continuity of the Iraqi clandestine nuclear program, since the know-how is there and so is the determination. Fishman stressed that "one cannot bomb the minds of Iraqi scientists from the air."¹⁰⁵

Iraq has modified the Soviet-made Scud missiles to the 600-km range Al-Hussein missiles¹⁰⁶ and the 900-km range Al-Abbas missiles.¹⁰⁷ In 1989 Iraq claimed to have fired a launcher capable of lifting a satellite into orbit.¹⁰⁸ The Iraqi missiles were shown operative during the Iran-Iraq war and in the bombing of Riad and Tel-Aviv during the Gulf War, when they reached their targets with a relatively high accuracy.

Iraq's nuclear ambitions have accelerated the nuclear

¹⁰² An interview on CBS, in *Yediot Aharonot*, 14 January 1992.

¹⁰³ *Yediot Aharonot*, 1 March 1992.

¹⁰⁴ Amos Gilboa, "The Iraqi Nuclear Effort", *Ma'ariv*, 15 July 1991.

¹⁰⁵ *Hadashot* (Tel Aviv), 11 October 1991.

¹⁰⁶ Tested on 4 August 1987.

¹⁰⁷ Tested on 29 February 1988.

¹⁰⁸ *Jerusalem Post*, 8 December 1989.

program of its neighbor and bitter enemy, Iran.

Iran: The Iranian nuclear efforts started in 1974, when the Shah had established the Atomic Energy Organization of Iran (Poneman 1982), with a U.S.-supplied research reactor and European-supplied materials. The nuclear program was suspended during the Iran-Iraq War and renewed thereafter in 1989, with the assistance of China, Argentina, Pakistan¹⁰⁹ and India,¹¹⁰ and a build-up of more nuclear sites and reactors. In 1994, Iran is attempting to manufacture nuclear warheads. President Ali Khamenei declared these intentions and urged his scientists to work in this direction,¹¹¹ and commander-in-chief of Iran's army, Hojat Rafsangani, announced, "We should fully equip ourselves both in the offensive and defensive use of chemical, bacteriological and radiological weapons" (Cited in Spector 1990). Leshem¹¹² argued that one may expect Iran to have an A-bomb towards the end of the century.

The collapse of the Soviet Union gave the Iranians a golden opportunity to purchase nuclear supplies, scientists and reactors,¹¹³ and to shop around for ready nuclear

¹⁰⁹ *Yediot Aharonot*, 15 November 1991.

¹¹⁰ *Independent* (New-Delhi), 11 November 1991.

¹¹¹ *Yediot Aharonot*, 15 November 1991.

¹¹² Daniel Leshem, a strategist, quoted in *Yediot Aharonot*, 15 November 1991.

¹¹³ *Sunday Times*, 25 January 1992; *Yediot Aharonot* 27 January 1992.

warheads,¹¹⁴ as well as ballistic missiles.¹¹⁵

Iran appears to be shopping for nuclear technology that could be used to develop a weapon. The most blatant example. . . was an effort to buy enriched uranium that was not compatible with its peaceful nuclear programs. . . . Iran is seeking nuclear research facilities, related equipment such as computers, fuses and nuclear scientists. . . . Iran is developing its missile industry; according to some intelligence reports, it has also bought medium-range M-9 and M-11 missiles from China for testing. China has not provided the guidance systems, but there are signs that the Iranians are searching for the technology in Europe and the United States.¹¹⁶

Dr. Kay, a former U.N. inspector, mentioned the similarity between the Iraqi and Iranian efforts and characterized these efforts as "buy anything, anywhere."¹¹⁷

Nuclear programs, yet on much lower scales, are in progress in four other states in the region. As a result of their relative inferiority to the aforementioned regional

¹¹⁴ *Globs* (Tel Aviv), 10 January 1992; *Yediot Aharonot*, 15 January 1993.

¹¹⁵ *Yediot Aharonot*, 29 January 1992.

¹¹⁶ *NY Times*, 26 April 1992, 2E.

¹¹⁷ *Globs*, 9 March 1993.

nuclear actors, these states are described together and in less detail.

Egypt, Syria, Libya, and Algeria: Nuclear efforts in Egypt were limited to peaceful use after signing the peace treaty with Israel in 1979. Yet, Egypt is capable of delivering a 'receivable' ready warhead by its Scud missiles, and was reported to be involved in advanced missile production (Navias 1990). Syria lacks the basic nuclear infrastructure and is not involved in nuclear research. Nevertheless, Syria maintains an effective missile capability by purchasing Scud-B and SS-21 missiles from North Korea,¹¹⁸ and is developing chemical and biological weapons.

Libya is striving to acquire nuclear arms. After the futile attempt to purchase nuclear arms from China during the 1970s (Heikal 1975), Libya began developing its nuclear infrastructure with a Soviet reactor and Pakistani assistance (Spector 1990). With the collapse of the U.S.S.R. it was reported that Russian nuclear scientists were spotted at work in Libya.¹¹⁹ Yet, its efforts brought only minimal progress. Libya's delivery systems are relatively backward, despite the country's Soviet Scud missiles and some more modern systems purchased from Brazil.¹²⁰

¹¹⁸ *Yediot Aharonot*, 1 December 1991.

¹¹⁹ *Daily Express* (London), 19 January 1992.

¹²⁰ "Missiles To Libya", *Washington Times*, 22 February 1988.

Algeria has recently become involved in nuclear research and is striving to produce nuclear arms,¹²¹ probably with support from Iraq which helps to build the "first nuclear device in the Muslim world."¹²² Additionally, Algeria's delivery systems are relatively crude (Navias 1990).

Most aforementioned Arab nuclear candidates also make use of delivery systems other than missiles. As in the case of Israel, the other regional air forces are well advanced and experienced in battle. Previous clashes demonstrated the competence of strike aircrafts and the vulnerability of all actors to this means of delivery.¹²³ In the nuclear age, one cannot afford even one incident of an aircraft breaking through and reaching its target. Evron (1987) mentioned artillery as another potential means of delivery. He argued that most actors are capable of delivering small nuclear warheads to short-range targets by cannons. This option is sufficient for tactical use of small nuclear warheads. Feldman (1982) specified that nuclear devices can also be launched from large commercial aircraft, helicopters, and vessels. These means would take advantage of the many commercial routes in the region and the proximity of most actors to seas.

In summary, Israel maintains its regional superiority, in

¹²¹ *Yediot Aharonot*, 21 January 1992.

¹²² *Sunday Times*, 5 January 1992.

¹²³ Israel, which enjoys regional air superiority also absorbed air strikes in 1967 and 1973 wars.

terms of nuclear capability. The ambiguity that surrounds Israel's nuclear capability and strategic implication confounded Arab nuclear programs and deterred them from cooperating in a joint nuclear effort. Moreover, Arab countries worried not only about Israel's nuclearization but also about other Arab states nuclear aspirations as well (Evron 1987). Individual nuclear programs faced non-proliferation obstacles and technological deficiencies. Yet, Arab intentions are there; political decisions have been taken; and more significantly, economic resources are available, keeping the Arab nuclearization process en route.

B. Survivability of Nuclear Potential

The buildup of nuclear capability is usually accompanied by concerns about surviving a potential first strike, preemptive and preventive alike. In the Middle East, Iraq experienced the consequences of absorbing a surgical strike in 1981. The Gulf War showed that Iraq learned its lesson and invested great efforts in providing survivability to its nuclear infrastructure and means of delivery. Thus, Iraq invested in dispersing and hardening its nuclear installations, as well as keeping the mobility of its missile launchers. These efforts made it very difficult, sometimes impossible, for the allied forces to neutralize them.

As in the case of the superpowers, although to a smaller extent, there are several methods in use to attain

survivability in the Middle East:

- A variety of delivery systems, as described earlier.
- Quantity of weapons - this is the most problematic method to be implemented in order to attain survivability in the region, because of the technical limitations of the involved actors. Israel seems to have built as many as 200 warheads (Barnaby 1989). Other nuclear actors still strive for their first bomb.
- Mobility of weapons - Iraq has demonstrated that mobile missile launchers can effectively survive conventional surgical strikes. Yet, the utility of this method is declining due to the growing competence of surveillance systems in the Middle East. Israel now has the Hawkeye E-2C Airborne Early Warning System, and so have some Arab states (Rosen 1977). Saudi Arabia has the more advanced Boeing E-3A Early Warning And Command System, AWACS (Feldman 1982). Moreover, Israel is developing its satellite technology, and it intends to launch an intelligence satellite in the future.¹²⁴
- Hardening - there is no evidence of hardened silos for nuclear missiles in the region, silos which can absorb nuclear assault. Nevertheless, the actors are aware of the utility of hardened silos (Feldman 1982), and are known to employ this method for their air forces as well as some military and nuclear facilities. The Iraqis demonstrated the benefit of

¹²⁴ General Ehud Barak, Israel's chief of staff, interview to IDF Broadcast Service, 15 June 1993.

hardening when their missile sites absorbed and survived tremendous bombings during the Gulf War.

- Dispersion and spreading of delivery systems seem to be crucial for actors with weaponry less sophisticated than those of the superpowers. The more dispersed the delivery systems, the greater is the number of warheads required for a successful first strike. Yet, dispersion is more likely to be stressed in the vast Arab countries than in Israel, due to Israel's small territory. Israel's technological superiority in missile technology may compensate for its small size. Rosen (1977) referred to another Israeli advantage, the possibility of dispersing hardened silos near or within the Arab population in Israel, thus holding Arabs as hostages in case of an Arab first strike. This option would decrease Arab readiness for a preemptive strike on Israel.¹²⁵ Furthermore, an Arab nuclear first strike on Israel is liable to harm Arab major cities, such as Damascus in Syria and Palestinian cities in the West Bank, because of their proximity to Israel (Feldman 1982).

- Concealment of nuclear weapons and secrecy concerning their location are essential for avoiding a preemptive first strike. When considering such an attack, one should have highly credible information regarding the location of targets, since complete destruction is crucial. Any weapon that is left in place might be used against the attacker in retaliation. The

¹²⁵ Al-Ayubi, "The Truth On The Nuclear Challenge Between Egypt And Israel", *Al-Usbu Al-Arabi* (Beirut), 8 July 1975.

failure of U.S. and Israeli intelligence in tracking Iraqi Scud launchers during the Gulf War illustrates the significance of this method.

Feldman (1982) argues that a successful employment of these methods does not guarantee the survivability of the adversaries' nuclear arsenal and a stable second strike capability. Yet, it would contribute to uncertainty about the probability of a successful first strike. The possibility of a few warheads and delivery systems surviving the attack and retaliating is sufficiently high in order to sow fear in the heart of statesmen, thus convincing them to avoid an attack. And, in a case of multi-nuclear Middle East, this fear may contribute to a stable balance of terror and stabilization (Rosen 1977).

1. The invulnerability of C'I systems

The invulnerability of Command, Control, Communication, and Intelligence systems is essential for the proper functioning of nuclear systems. Although operating relatively modern warning systems, the actors in the Middle East are far behind the superpowers in the technical level of C'I systems.

Five factors make Middle Eastern C'I systems look too cumbersome for a nuclear environment. First, the backward technology (in comparison to that of the superpowers) and the lack of command, control and communication centers that can survive nuclear attack, raise doubts about the ability of

systems to operate properly in case of nuclear exchange. Second, the short distances between the belligerents leave merely a few minutes for detecting an incoming attack, deciding upon a proper response, and implementing the decision. Third, unlike the bipolarity of the superpowers' relations, the Middle East is a multi-polar system, thus the identity of a foe or even an ally is vague, and tracing the source of an incoming surprise attack might be difficult.¹²⁶ Fourth, the high friction level and the common use of arms contribute to a biased 'attitudinal prism' and misperception of the enemy (Brecher 1972). Thus, C³I systems in the Middle East are less efficient and trustworthy, and are likely to misperceive the enemy's behavior, or even unnecessarily escalate a conflict to a nuclear level on grounds of these images. Evron (1987) added the fifth factor, arguing that the radical assumptions regarding the adversary's demonical intentions are common in the Arab-Israeli conflict. Thus Arabs, especially fundamentalist groups, perceive Israel as a wicked state, while Israelis grasp Arab's intentions as genocidal.

These five factors potentially may contribute to misjudgment of the adversary's moves, and to breakdown of operational systems. However, a regional adoption of the superpowers' policy, such as launch upon the destruction of C³I centers, might contribute to reliability of these systems.

¹²⁶ Evron (1987) provided the example of an Arab attack on Israel from the sea, where the vessel's identity is vague.

Once the enemy foresees an automatic launch of all delivery systems, he would hesitate to harm the C'I centers, or preempt against nuclear facilities (Rosen 1977). It is likely that SNPs who lack the C'I capability of nuclear powers will adopt automatic launch as a deterrent against first strike on their own C'I facilities. This adopted policy is liable to bring about accidental launch, yet it encourages arms control and cooperation for the avoidance of such accidents. And as argued later on, the great vulnerability of the involved actors would enhance control of nuclear arms. In one incident, the Israeli interception of Libyan passenger airplane over Sinai in 1973, the C'I system was proven technically to operate under time pressure. Nevertheless, this event also demonstrated that time shortage forced misjudgments and a fatal decision upon Israeli decision makers (Evron 1979).

2. Second strike capability

Second strike capability is essential for stability, by canceling hopes for the elimination of the adversary's retaliatory capability. It is mainly achieved by assuring the invulnerability of nuclear forces (McNamara 1968). Many scholars were skeptical of the ability of Middle Eastern states to develop an effective second strike capability. Dowty (1978) argued that such a balance of terror would be unstable. The vulnerability and penetrability of the involved actors would pose a constant temptation for first strikes.

Evron (1976) stressed that the process of establishing a second strike capability is long, and it bears many uncertainties in regard to the level of invulnerability.

Middle Eastern nuclear forces are, and will be, relatively small and primitive in comparison to the superpowers, and, as of 1994, the regional nuclear actors have not deliberately designed second strike forces. Yet, Feldman (1982) contradicted the aforementioned doubts and argued that because of the great values at stake, 'uncertainty' may enhance and contribute to second strike capability. A solid balance of terror would not be a product of an assured second strike capability but a by-product of uncertainty and fear among the belligerents' leaders, in regard to their ability to employ a successful first strike. The exorbitant price of retaliation, even by one warhead which would survive the first strike, poses many reservations in the hearts of statesmen. "Despite the greater vulnerability of nuclear forces of small states like Israel in relation to forces of the superpowers, decision makers would remain uncertain about just how vulnerable these forces are" (Feldman 1982, 101).¹²¹

There is no reason to believe that the actors in a multi-nuclear power Middle East would forsake the development of second strike capability. It is more likely that they will follow the example of the superpowers, from monopoly of one side, through the emphasis of massive retaliation and potential counter-force surprise attack, to hardening and

¹²¹ Translated from Hebrew.

second strike capability, and to MAD. Neither side would feel confident without assuring the survivability of his nuclear arsenal and his ability to retaliate. Technically, second strike capability, albeit more primitive than the superpowers', is achievable. The alternative is a constant security dilemma and a spiral arms race which leads to considerations of a disarming assault and urge to preempt, and to instability.

Stability will result from the fact that a perfectly successful first strike could not be guaranteed. The fact that weapons of deterrence may operate in a less than perfect mode and still fulfill their task, while efforts to disarm them should be conducted in an absolute manner, assures that the balance of terror remains stable (Feldman 1982, 102).

Thus, Meyer's (1984) objection regarding the lack of sufficient nuclear capability in the hands of Middle Eastern SNPs, which does not allow for reserves and back-up stockpile as in the superpowers' case, is refuted by the uncertainty and inability to destroy completely the adversary's nuclear arsenal.

C. Risks and Dangers of Nuclearization

The process of nuclearization in the Middle East, as in many other regions, bears some risks and dangers that affect stability. As such, the risks and dangers raised objections to the process of nuclear proliferation. Although they are also exist on the global level, they are properly managed or minimized by the superpowers. In the regional context, however, it was frequently argued that these risky predicaments are liable to endanger not only the region but the whole international system. Although the capabilities of regional actors are far behind those of the superpowers, regional actors are capable of dealing with risks and dangers in a proper manner, maybe as efficiently as the superpowers. Scholars who object to regional nuclear proliferation in the Third World based their argumentation on an ethnocentric view of international politics (Wiarda 1985). Waltz ironically referred to this ethnocentric view by stating:

It tells us that what did *not* happen in the past is likely to happen in the future, that tomorrow's nuclear states are likely to do to one another what today's nuclear states have not done. A happy nuclear past leads many to expect an unhappy nuclear future (Waltz 1981, 3).

The risks and dangers of nuclearization in the Third World may be summarized under four categories: rationality of decision makers, instability of regimes, nuclear

socialization, and deficient technology.

1. *Rationality of leaders* and their readiness to take high risks are often used to oppose nuclearization in the Middle East. There is an assertion that regional foreign policies tend to irrational and spectacular acts.

The Arab-Israeli conflict is characterized at times by intense and uncompromising fears and emotions, expressed in extreme utterances and bitter images. The practical issues are overlaid by elements of religious war and transcendent moral imperatives that some claim would justify the sacrifice of millions (Rosen 1977, 1373).

The rationality argument was widely expressed in relation to Arab governments by Pitai (1973) and Berger (1971). Zoppo (1975) warned that once Israel and Egypt obtain nuclear arms, "The slender reed of rational calculation may not sustain, in a nuclear confrontation. . . the weight of the Arab quest for justice. Arab policies have in the past, on occasion, appeared suicidal" (p. 24). Dowty asked: "Can [nuclearists] explain Nasser's behavior in the 1967 crisis as an exercise in rational policy-making?" (quoted in Rosen 1977, 1373). Similar argumentation was used by Israeli officials, Yigal Allon and Israel Galili, who said, "The Arabs fit Schelling's definition of 'madmen and children' in the nuclear age" (Aronson 1992, 74).

Inadequate rationality in the decision making process is perceived by Evron (1976) as the main prospective stumbling-block to stability in the Middle East. The additional extreme ideologies which motivate some regional actors, and the tendency to use weapons, overcomes the skillful non-use which is a prerequisite of possessing nuclear arms. Elsewhere, Evron (1987) argued that radical or fundamentalist regimes tend to 'export' their revolutionary message across their borders, as in the cases of Iran under Khomeini and Egypt under Nasser.¹²⁸ Yet, one should note that the two revolutionary giants, China and the U.S.S.R. have 'exported' radicalism as long as they did not harm vital interests of other nuclear powers (Waltz 1981).

Rosen refuted the danger of irrationality of Middle Eastern leaders, and compared the region to other states' behavior in similar conditions. He concluded:

Comparison with the case of China suggests an adversary whose behavior once seemed irrational from a distance may look quite restrained after relations are improved and more objective and detailed information becomes available. . . . Nasser's 1967 miscalculation in Sinai may look no worse than Truman's mis-assessment of China's willingness to intervene in Korea, or Kennedy's

¹²⁸ Iran is spreading the fundamental Shi'ite message into Iraq, Saudi Arabia, Lebanon and Israel. Egypt has carried the revolutionary flag into Saudi Arabia, Jordan and Yemen.

groundless expectation that the Bay of Pigs incursion would trigger a popular uprising against Castro (Rosen 1977, 1374).

Rosen concluded that the actors of the Middle East are no less 'rational' than others and are restrained by the regional nuclear uncertainty, since "nothing so clarifies the mind of a statesman as the knowledge that his miscalculation tonight could lead to annihilation in the morning" (Rosen 1977, 1379). For that reason the superpowers withdrew from their offensive initiatives during the Cuban Missile Crisis and thereafter. Morgan (1977) stressed that the danger of irrationality can be relevant as well for the five 'members of the nuclear club'. Waltz brought Muamar Qaddafi of Libya as an example for a leader who, many argued, cannot be trusted to manage nuclear weapons responsibly. He concluded: "Despite wild rhetoric aimed at foreigners, [this] irrational ruler became cautious and modest when punitive actions against [him] might have threatened [his] ability to rule" (Waltz 1981, 11). Qaddafi has shown restraint during hostilities with Egypt in 1977, and also following the American raid on Tripoli in 1986, and withdrew from Chad after being threatened by Western powers.¹²⁹

While rationality implies behavior of actors who calculate costs and benefits, the term 'sensitivity to costs' presumes refraining from actions which bear high costs. A

¹²⁹ "Qaddafi Planning a Rapid Deployment Force", *NY Times*, 20 November 1981.

sensitive actor dismisses costly actions due to his hesitation and fear of the hazardous consequences. It is this sensitivity to costs that deterred Arab leaders from taking excessive risks in the past, and it would probably continue so in nuclear reality (Feldman 1982). Therefore, the concept of 'sensitivity to costs' seems to fit better in situations of nuclear deterrence.

In another aspect, the immediate response of a power finding itself behind in the race could plausibly be a preemptive strike (Schelling 1966). Among bitter enemies, as in the Arab-Israeli dispute, the temptation to use the weapons would be enormous. The character of decision making units is traditionally militant and authoritarian; foreign policy is military minded; and the lack of nuclear experience is liable to enhance the security dilemma and create instability (Tucker 1961). Nonetheless, it is this 'military mind' of Middle Eastern leaders which might help to avoid nuclear war. Wars become less probable as the costs of war rise in relation to possible gains, and this argument was proven valid during past crises in the Middle East.¹³⁰ Waltz (1981) emphasized that in a conventional setting one might be uncertain about the outcomes of war, and thus tend to take higher risks since even in defeat his sufferings and damage will be limited. But when nuclear arms are involved, calculations are made differently.

¹³⁰ The example of Egypt initiating an unwinnable war as a result of misperception (Stein in Jervis 1985) comes to mind, yet it was shown elsewhere that it was a calculated risk aimed at diplomatic gains, not military.

The anticipated hazardous outcomes of nuclear war are clear and the issue is survivability.

It seems that care and moderation, rather than rationality, is imposed on decision makers by the sensitivity to costs, on the one hand, and the fear that stems from clear anticipations of catastrophic nuclear exchange, on the other. Some scholars based the probability for successful deterrence on the notion of rationality (Beres 1990). Herein, the probability for successful deterrence is laid on the essence of fear. The implied conclusion is that the presence of nuclear weapons enhances careful calculations, prompts second and third thoughts before using them, makes miscalculations difficult, and induces caution in foreign relations.

2. *The internal political instability of states* poses another source of unpremeditated or accidental war. This danger seems to increase when nuclear arms are involved (Kahn 1960). Unstable regimes are more prone to resort to force in order to ease internal pressures or due to their military nature (Dunn 1982).

It seems that the issue of internal instability of regimes is less valid in light of the revolutionary times and turmoil the U.S.S.R. and the Eastern bloc have gone through. Nuclear arms were irrelevant in the struggle for political power within these countries. And Middle Eastern regimes which were referred to as "unstable and uninstitutionalized" (Evron 1987, 112) held out for quite a long period, as in the

case of Hussein in Iraq, King Hussein of Jordan, and the revolutionary regimes of Nasser in Egypt and Qaddafi in Libya.

3. *The lack of nuclear learning and experience* is mentioned as another risk of proliferation (Pranger and Dale 1975). The elite of the adversaries did not go through nuclear socialization. Since the use of force is widely accepted in the region, leaders are liable to perceive the bomb as just another weapon (Evron 1987).

Feldman (1982) stressed, in response, that the powers have not gone through nuclear learning prior to the actual acquisition of the bomb and that Arab states are incrementally developing sensitivity to the potential costs of nuclear war. Additionally, one should note that the powers reached possession of nuclear arms in an era of a world war, and while being involved in acute conflicts--the Korean War and the turmoil in Europe. So, there is no reason to believe that regional contexts are much different, especially in the Middle East, where the superpowers have a solid restraining influence, as demonstrated in the 1967 and 1973 wars.

4. *Deficient nuclear infrastructure*, such as inadequate arms safety and absence of required safeguards, nuclear accidents, unauthorized use and terrorism, all might lead to the outbreak of unintentional nuclear exchange (Dunn 1982). High vulnerability and less than perfect second strike capability would be followed by increasing insecurity and

hostility (Aron 1965), and temptation to preemptive war (Dowty 1978). The opponents may 'jump the gun' and strike before the other does, as did Israel in the 1967 War and the raid on Iraqi Osirac reactor. This danger is greater in Third World countries which lack the knowledge and resources to invest in safeguards. Therefore, and not only in the case of the Middle East, when a state acquires nuclear capability it seems to be a mutual interest of the international community, and especially the state's adversaries, that it has the ability to manage its nuclear capability properly. It is expected, thus, that the superpowers will be involved in the process of nuclearization, to the extent of limiting unsafe weapons, and offering the proper safeguards for nuclear systems.

To sum up, it seems that the aforementioned risks and dangers do not hold for regional actors more than for the powers. The regimes of the Middle East seem to be as sensitive to costs as any other regime in another region, and with respect to their assumed internal fragility, they happen to be quite stable. Nuclear learning and socialization is a process which statesmen of any nuclear power have to go through, and so do Middle Eastern leaders, who might find the experience of the superpowers very useful.

IV. Political Implications

A. Decisions of Nuclearization

An important element of nuclearization to be identified is the actor's political necessity for such a program.

ISRAEL: Israeli nuclear aspirations were conceived in the late 1940s during the early days of forming the state, by David Ben-Gurion who searched for "something to make the Arabs accept [the state]" (Aronson 1992, 58), something which can also serve as a means to equalize any possible Arab military superiority in the future. Later on, Yigal Allon expressed the need for safety measures in case the Arabs acquired the bomb (Allon 1990). The strong ties with France assisted Israel in getting know-how and materials during the 1950s. In the early 1960s, and as a result of French and American pressure to reveal its nuclear program, Israel has adopted the formula of 'not being the first' to introduce nuclear weapons into the Middle East and cast ambiguity around its nuclear development. Aronson confirmed this decision by quoting Walt Rostow, counselor and chairman of the Department of State's Policy Planning Staff from 1964:

The Israelis, with their extraordinarily heightened sense of vulnerability, are worried about an Arab attack conducted so swiftly as to make U.S. or Western support too late to be effective. . . . [The] Relationship with the U.S. and possible damage to that relationship are the

only major restraints on proceeding to achieve a national nuclear capability" (Aronson 1992, 76).

IRAQ: The Iraqi nuclear program was intended to satisfy three important political objectives: to counter Israel's nuclear arsenal which was perceived in Iraq as limiting the Arabs' choice of action; to advance President Saddam Hussein's claim to Arab leadership; and to hedge against Iran's nuclear aspiration and potential (Spector 1990; Power 1986), especially in light of the rise of Ayatollah Khomeini who sought the end of Hussein's regime.

IRAN: In 1980 Iraq went to war against Iran, a war which continued for eight consecutive years. The bitter war with Iraq urged the decision to go nuclear. Iran's vice President has declared that "if Israel continues to have possession of nuclear weapons, the Muslims must cooperate in producing their own weapon regardless of the U.N. non-proliferation efforts. A balance of nuclear capability must be reached between Israel and the Muslim people."¹³¹

The Iranian case is a good example for a nuclear decision aimed at national interests, such as self-help and protection from Iraq, which is justified by an ideological argument--the religious conflict with Israel. As aforementioned, it seems that ideological justifications are secondary to the state's own political interest.

¹³¹ Cited in *Yediot Aharonot*, 15 November 1991. See also *Al-Alem* (London), 13 November 1991.

B. Balance of Vulnerability among the Actors

Middle Eastern actors are highly vulnerable to nuclear attacks. In each of the countries, from the diminutive land of Israel to the vast sands of Saudi Arabia, most of the population and valuable resources are concentrated in only a few highly vulnerable targets (Feldman 1982). Moreover, the valuable potential targets in each state are militarily approachable, as has demonstrated in previous wars. This is the special character of the Middle East that contributes to sensitivity and awareness of the unacceptable costs, thus to balance of terror. In order to demolish an actor, there are no more than three to five strategically meaningful targets in each country, where its political, social, economic, and cultural infrastructure assets are concentrated. Contrary to Dowty's (1978) opinion of asymmetrical vulnerability in the region, it appears to take minimal efforts to reach these targets in each country. Furthermore, primitive small bombs would suffice for the elimination of these valuable targets.

The high concentration of value in Middle Eastern states makes them highly vulnerable in comparison to larger, more dispersed Western societies. Resources are limited, and assets are mostly of one kind, such as oil fields.

A nuclear bombardment on each of these states might leave most of the population unharmed, yet it would be sufficient to eliminate the state as a political entity as we know it today. Moreover, the remaining population, which is mostly agricultural, would have to face the after-shock of

radioactive fallout, broken social and political institutions and loss of national assets. In the case of Israel and Jordan, there would be little hope for the surviving population, because of the small size of the country.

In a case of an Arab-Israeli nuclear round, Israel might need some 25-35 warheads in order to reach all targets mentioned in the following table. The Arab side would require 1-3 bombs to eliminate Israel. This asymmetry in the number of vulnerable targets is equalized by the Israeli superiority in nuclear development and delivery systems, and by its ability to reach the targets by means other than ballistic missiles. Thus, the potential balance of terror would be stable.

Middle Eastern targets

Country	Target cities	Population (%)	Main asset
Israel	3	40	manpower
Egypt	3	28	Aswan Dam
Iraq	1	21	oil, dam
Iran	5	20	oil
Syria	2	28	dam
Jordan	1	30	manpower
Saudi Arabia	3	18	oil
Libya	2	41	oil

Source: PC Globe 4.0 1991.

C. Deterrence and Its Effect

The question of the shape of deterrence in the regional context has been considered widely by scholars and statesmen alike. The different types of nuclear capability and volume, together with the unique characteristics of the Arab-Israeli conflict, gave rise to several assessments of the preferred model for deterrence. The views on this subject vary from remaining at the lower developmental stage of 'nuclear option' (no production of actual bombs, but capability to assemble them in a short time), through keeping the 'bomb in the basement' (the bomb already assembled but secret), to an overt deterrence posture with officially declaring possession of the bomb and adopting a recognized strategy of deterrence.

In 1994, Israel enjoys the privilege of nuclear monopoly. Yet, as noted earlier, some Arab states are involved in nuclear programs, and other Arab states seek to acquire nuclear capabilities from external sources. Occasionally, the 'Islamic bomb' is mentioned in the Arab world as a wish for Muslim worldwide cooperation that uses Pakistani nuclear capability to equalize with Israel.

Israel attempts to retain its monopoly, and for that it went as far as destroying the Iraqi nuclear reactor, the most advanced nuclear facility in the Arab world. Israeli leaders proclaimed this objective in the past and there is no reason to believe their intent will change, since it seems just natural for a state to aspire to the preservation of its advantages (Nakdimon 1987). Allon declared in 1965 that

"Israel will not permit any of its neighbors to start this [nuclear] destructive race."¹³² Accordingly, General Sharon stated in 1975, "If we discovered that the Egyptians were working on a nuclear weapon of their own. . . we would have no choice but to wipe them out."¹³³ Yet, U.N. inspectors' disclosures of the Iraqi nuclear capability following the Gulf War suggested that monopoly could not be sustained forever, and that the Middle East will eventually become a multi-nuclear region.

Regardless of the stage of regional nuclear development, whether monopoly or multilateral, it is essential for statesmen to recognize nuclear threats and perceive them as credible (Schelling 1966 1980), to hold a 'strategic dialog' (Feldman 1982) with the adversary in order to draw clear 'red lines' and prevent an unintentional war, and to engage in nuclear learning and socialization (Nye 1987). "Certainty about the relative strengths of adversaries. . . improves the prospects for peace" (Waltz 1981, 6).

1. The nuclear crisis of the 1973 war

Evidence of Egyptian nuclear consciousness emerged as early as the late 1960s. In 1969, Nasser met with Libyan ruler Qaddafi who offered all the resources at his disposal for the holy task of destroying Israel. Nasser replied that

¹³² Cited in *The Jewish Observer and Middle East Review*, 24 December 1965, 6.

¹³³ *NY Times*, 8 February 1975.

a war of destruction against Israel was impossible because it would entail a "nuclear holocaust" (Heikal 1975, 76). Nasser, showing nuclear consciousness, warned Qaddafi that the issue was not a possible nuclear exchange between the superpowers but rather a probable superpowers' intervention to avoid nuclear use by Israel in case of a successful war of destruction against Israel. "The superpowers would not allow it." Nasser continued by admitting his failure to reciprocate Israel's nuclear option. Thus, Egypt "had opted for a limited war, with limited Soviet aid, to liberate Arab land" (Nasser, cited in Aronson 1992, 132).

Israeli deterrence was also effective at the time thanks to the threatening presence of the nuclear reactor in Dimona, and the constant talk about it in the U.S. and elsewhere. These two factors, as a form of ambiguous deterrence, had penetrated into Arab perception. Together with the implied Israeli nuclear threats, an effective Israeli nuclear deterrence persisted.

Egypt under Sadat, Aronson (1992) stressed, dropped the traditional Arab aim--the war of destruction--and opted for a major, but limited, offensive. Sadat understood that Egypt had no chance of succeeding in a war of destruction without help from the Soviets, which it was not likely to get for that purpose, both because of the superpowers' nuclear deterrent relations and the détente between them at that time. Sadat related to détente as a disaster for the Arabs. "All of a sudden a magician emerged on the international political

stage. . . . He hit the hat with a stick and a rabbit came out. The rabbit was called détente between Russia and the U.S. . . . This was a surprise."¹³⁴ Elsewhere, Sadat said: "Maybe we will just be able to catch the last part of the tail of the détente" (Heikal 1975, 169). Sadat perceived the need to plan a limited war for the release of the occupied Egyptian land, and to find some common ground with the Americans in order to shake the political stalemate between the superpowers with regard to the Middle East. After forcing the Soviets out of Egypt in summer 1972, Israel's "defensive boundaries" (Dayan 1969, 512) were conceived by Sadat as a suitable ground for a conventional attack. When he seemed to have brought Soviet-Egyptian cooperation to a major crisis, both American and Israeli decision makers--traditionally preoccupied with a Soviet-supported major war that might endanger Israel's very survival--became more confident that no war at all was in the offing (Aronson 1992, 140).

The October 1973 surprise attack was very successful in breaking Israel's defensive lines at once, in both the northern and southern borders. Yet equally surprising, the Arab armies unexpectedly halted their advance on both fronts. The Egyptians who crossed the Suez canal in short time did not fan out in a deep penetration and allowed the Israeli reserved forces to reach the battle zone without serious interference. As well, they did not try to attack Israel's sectorial headquarters, the ammunition and supply depots, and the

¹³⁴ *Al-Sayassa* (Kuwait), 7 January 1977.

strategic passes leading toward the depths of Sinai. The behavior of the Syrians was quite similar. After a successful crossing of the occupied Golan Heights they were ordered to stop, allowing enough time for Israeli reserved units to reach and overthrow them. The Syrian Chief of Staff at the time, General Mustafa Tlass, refused to answer the question why the Syrian offensive halted when there was little in the way of Israeli defense to stop them. Tlass admitted the order to stop, and said that "the time has not yet come to discuss the reasons for it" (Quoted in Wakebridge 1976, 20). The Syrians did not even bother to bloc the two bridges leading to the heights.

Syrian war behavior may be comprehended in light of its government's conception of 'guerrilla warfare in the nuclear age' imported from Vietnam and Algeria. Accordingly, President Assad of Syria was ready to risk a limited conventional attack while being careful not to trigger an Israeli nuclear response, which the Arabs had been deliberating since the late 1960s. Therefore, he refrained from entering into Israeli territory proper (Aronson 1992).

The advance of the two Arab armies, especially the Syrian, had brought about the first nuclear crisis in the Middle East, in 9 October 1973, when Dayan out of growing pressure ordered the deployment of Israeli nuclear missiles.¹⁵ Green quoted William Quandt, then NSC Middle East expert, who said Israel was preparing to arm Jericho missiles should the

¹⁵ "How Israel Got the Bomb", *Time*, 12 April 1976.

Egyptian army capture the Sinai passes. Quandt argued that the Nixon administration was concerned about Israel's behavior, because it evaluated Arab goals as limited, and had not expected vital Israeli interests to be threatened (Green 1988). Shortly after, Dayan brought his order to the Israeli war cabinet for approval. However, the war cabinet had it canceled at once (Evron 1987).

Kissinger said that Sadat planned a limited war, probably the last before the introduction of nuclear weapons into the region, or rather of missiles armed with nuclear warheads (Cited in Aronson 1992, 144). Quandt stated that Sadat recognized the dangers inherent in an overall offensive, even one with limited aims, beyond the Sinai passes because of the anticipated Israeli nuclear response. "It is true that the [Israeli] nuclear option has dictated his calculations ever since" (Cited in Aronson 1992, 145).

Dayan has misperceived the limited goals of the Arab attack. His nuclear threat issued during the war served to signal the Arabs, as well as the superpowers, the Israeli nuclear red-lines and perception of nuclear weapons as last resort. Nixon's warning to Arab ambassadors not to cross Israel's international borders (Aronson 1992), together with the Arab's own self-limitation in the battlefield, convinced Israel to cancel the order and helped in managing the nuclear crisis.

It is expected that in case of a continuation of the nuclear crisis the superpowers would have intervened in order

to avoid nuclear use, either by halting the Arab armies or by satisfying Israel's security demands. In this crisis the Americans were interested in clearing misperceptions, both of Arabs--Nixon's warning--and of Israelis (Kissinger 1982).

To sum up, Egyptian decision makers assumed that the Israelis would understand the limited goals of the war and the intention *not* to threaten the existence of Israel proper, thus would not resort to nuclear threat or use (Evron 1987). Nevertheless, the Egyptians were found to be wrong. The shock of the collapse of Israel's 'defensible boundaries' was so great that Dayan issued a nuclear threat. The U.S., which is customarily preoccupied with regional nuclear crises but not inclined to intervene to solve regional disputes, helped to relax the 1973 nuclear crisis by providing Israel with a full-scale airlift of conventional arms and ammunition, the major concern of Israeli leaders. Although Israel's nuclearization was central to the Arab war *preparations and plans*, the effect of the nuclear crisis on the course of war was marginal.

The 1973 nuclear crisis between the superpowers

The 1973 war brought about another nuclear crisis--the one between the superpowers. In the break of war each of the superpowers assisted its client in diplomatic support and arms transfers. Thereafter, a cease-fire agreement was negotiated, yet failed to persist in battlefield. The Israeli military success in crossing the canal and encircling the Third Egyptian Army Corps brought about a Soviet threat of direct

intervention. The Soviets proposed a joint intervention by the superpowers to reestablish the cease-fire lines, and threatened unilateral intervention if the United States refused (Garthoff 1985). At that time, Soviet arms shipment to Egypt was suspected to contain nuclear warheads (Quandt 1977), an act which was perceived by the Americans as a nuclear threat. In response, the U.S. declared a worldwide nuclear alert at the level of DEFCON III. It came to clarify to the Soviets that they violated détente (Aronson 1978). The crisis came to a conclusion after the American pressure on Israel that induced the lifting of the Israeli siege on the Third Army.

The 1973 nuclear crisis was not an acute missile-crisis type situation. The Soviets intended to halt Israeli progress, to bring Egypt back to their alliance, and in the process, to regain their ally in the Middle East (Kissinger 1982). The Americans acted to prevent any possible confrontation with the U.S.S.R., as well as preserve their local political gains. The short crisis was not developed to a serious danger of a direct clash. As Secretary of Defense Schlesinger said: "We were very far away from confrontation" (Cited in Bundy 1988, 523). Both sides issued military signals which seemed to be unnecessary, since they both accepted and respected the most important issue to the other--the halt of Israeli attack for the Soviets and the refraining from unilateral intervention for the Americans.

There was a risk of nuclear exchange in the crisis, as in

any crisis between the superpowers, yet it turned out to be a remote and manageable risk in comparison to the 1962 Cuban Missile Crisis. Kissinger attributed the fast conclusion of the crisis to the mutual supreme interest of the superpowers, "a special duty to see to it that confrontation do[es] not threaten civilized life" (Cited in Bundy 1988, 524). This is to say that the mere existence of nuclear capability in the hands of the superpowers directed their leaders to avoid any further escalation.

2. Nuclear deterrence in the Middle East

Israel, which in 1994 has the benefit of exclusive possession of nuclear capability (option or in the basement), has chosen to equivocate about its real capability. This type of deterrence by imposing uncertainty is referred to as a 'strategy of ambiguity' (Evron 1987), 'undeclared bomb' (Spector 1988), and 'opacity' (Aronson 1992).

The basic principles of Israel's nuclear policy are, firstly, to avoid nuclearization of other actors in the Middle East, and secondly, to retain the nuclear option as a 'last resort'. Generally, this strategy means that threats are implicitly issued, and while Arab states are not certain that Israel does not have nuclear weapons, they are cautious in their policies. It is doubtful whether threats would be carried out, but deterrence remains as a result of the remote possibility that they might be. Feldman (1982) described Israel's strategy as 'deterrence by excessive uncertainty'.

It deters by imposing uncertainty regarding the readiness to execute nuclear threats "multiplied" by uncertainty with respect to the capability to execute the threat.¹³⁶

Rosen (1977) advocated overt deterrence, yet mentioned that Israel would benefit from U.S. support as long as ambiguity surrounds its nuclear position. The decision not to acknowledge its nuclear program has helped Israel to prevent a political dispute with the U.S.A., and to preserve its nuclear monopoly by dissipating pressures on Arab states to follow suit (Dunn 1991). Being the 'deterrer' which wishes to preserve the status quo, and perceiving the Arabs as challengers, Israel's ambiguous nuclear deterrence which supports conventional deterrence suited Israeli decision makers. Israel's policy aimed at an ambiguous pledge not to be the first to introduce nuclear weapons into the region, coupled with a proviso that the first such introduction by others will be matched at once by Israel. The quintessence of Israel's nuclear policy is contained in its repeated assertions: "We will not be the first to introduce nuclear weapons into the Middle East" first spoken by Prime Minister Levi Eshkol in 1964. A modified version later made by General Yigal Allon added to this statement an implied promise that Israel "would not be the second either" (Lefever 1979, 67). Other Israeli leaks have converged on the same line over the years, always backed by official Israeli statements that all

¹³⁶ Feldman is unclear by suggesting an overt strategy because of uncertainty, yet claiming that it is uncertainty which supports a second strike capability by enhancing fear.

speculation about Israeli nuclear weapons are idle speculation, yet always reinforcing the impression that most of the preparatory work for any weapons acquisition had already been accomplished (Quester 1983).

The implications of Israel's nuclear ambiguity are many (Evron 1987). First, the vagueness around the real developmental status prevented the issue from being at the top of the Arab agenda, thus contributing to a slowdown of Arab progress. Second, keeping the status of a nuclear 'bomb in the basement' allows Israel the option of upgrading to a 'declared nuclear state' whenever most convenient, such as in a case of a sudden Arab conventional military superiority achieved rapidly. "A political decision is sufficient to declare Israel as having nuclear weapons" (Evron 1987, 82). This implication is also valid in the case of an Arab state's becoming nuclear, by gradual progression or sudden acquisition. Third, nuclear ambiguity contributes to and amplifies Israel's conventional deterrence posture.¹³⁷ And fourth, Evron (1974) argued that the mere fact of having a nuclear program made Arab leaders believe it would be almost impossible to overcome Israel, thus encouraging them to seek a political agreement with Israel. The idea of nuclear capability as strengthening chances for peace was also expressed by then Israeli Labor Party leader Shimon Peres.¹³⁸

¹³⁷ Evron mentioned this use but expressed doubts about it.

¹³⁸ Interview in *Ma'ariv*, 29 June 1984.

The deterring effect of Israel's nuclear strategy on Egypt and Syria was reflected in their plans for the 1973 War. Prior to 1973, Israel's strategy combined conventional and implied nuclear 'bomb in the basement' deterrence (Haselkorn in Lawrence 1974). "They planned a limited war on the margins of the occupied territory, specifically not aimed at Israel's heartland and pre-1967 boundaries, in order to accomplish limited ends through a growing attrition and superpower intervention in their favor" (Aronson 1992, 146). This limited war plan intended to assure that Israel would not retaliate "By all available means."¹³⁹ Evron (1987) argued that Egyptian war plans, captured by Israeli intelligence during the war, detailed only phase one of the attack (crossing the canal) and lacked any specifications of phase two (seizing the passages of Sinai) and three (reaching the 1967 borders). Bundy (1988) argued that President Anwar Sadat of Egypt, being aware of his nuclear deficiency, had no desire to bring Israel to the brink of nuclear use, and thus did not aim at the extinction of Israel.

Skeptics about the impact of Israel's implied deterrence pointed to the Egyptian and Syrian decision to attack Israel in 1973. Yet, the limited war plans of the attackers made evident their uncertainty concerning Israel's nuclear weapons and when they might be employed.

All the evidence suggests that the Egyptian

¹³⁹ Moshe Zak, "The Delicate Issue", *Haolam Haze* (Tel Aviv), 25 May 1993.

offensive was planned, from the outset, to achieve very limited territorial advances, and the Syrian offensive does not seem to have been much more ambitious than this either. A part of such Arab moderation can be traced to the need for a security blanket of surface-to-air missiles. . . . But another part of this restraint and moderation would be fully consistent with a respect for Israeli nuclear deterrence (Quester 1983, 561).

General Avihu Ben-Nun, a former commander of the Israeli air force, argued similarly with regard to Iraq. He asserted that Saddam Hussein hesitated to use chemical warheads when he fired ballistic missiles on Tel Aviv, because of the effect of Israel's implied nuclear deterrence and fear of retaliation.¹⁴⁷

It was previously stated that Israel does, and most probably will, continue to oppose any Arab nuclearization attempt. Minister of Defense Ariel Sharon declared in his program to the 1980s:

The third element in our defense policy for the 1980s is our decision to prevent the confrontation countries or potential confrontation countries from obtaining nuclear weapons. Israel cannot allow the introduction of nuclear weapons. For us, this is not a question of the balance of terror but of our continued existence. So it will

¹⁴⁷ Quoted in *ibid.*, 22.

be our duty to nip this danger in the bud.¹⁴¹

The Israeli objection to a multi-nuclear Middle East stems from its highly concentrated population and small territory, which would nevertheless seem to make the use of nuclear weapons extremely unattractive to Israeli leaders, assuming that one could or would respond in kind (Potter 1988, 168). The Israeli desire of preserving its nuclear monopoly in the Middle East and keeping superiority, as reflected in Sharon's statement, reveals a conventional pattern of thinking in a nuclear environment. As aforementioned, when a conflict bears a nuclear dimension the opponents are expected to go nuclear, assuming they both feel the political need to do so. In case that one side maintains a nuclear monopoly, the other party will probably seek, and find, nuclear guarantees or nuclear umbrella from an external nuclear power. In the Middle East, such guarantees were granted to Syria and Egypt by the U.S.S.R.¹⁴² The 1973 War is an example of Israeli nuclear threat which was reciprocated by Soviet nuclear guarantees, leading to severe crisis between the superpowers. From the previous official statements, it seems that Shimon Peres was aware of the existential element of nuclear presence that strengthen motivations and prospects for peace.

The policy of opacity is justified by Aronson as another preventive measure against a multi-nuclear Middle East. "[An]

¹⁴¹ "The Undelivered Speech", *Ma'ariv*, 18 December 1981.

¹⁴² Although it was officially denied by the Soviets.

Open nuclearization would push Arabs to obtain their own nuclear option, and thus opacity, even if less 'credible' in deterrence's theoretical and established strategic terms, is the better choice" (Aronson 1992, 182). Yet, it is precisely the issue of high vulnerability which might lead to a skillful non-use and a stable balance of terror, as in the superpower context. As for itself, the policy of nuclear ambiguity was successful in leaving Arab leaders in doubt. President Husni Mubarak of Egypt expressed these doubts in 1983: "We have no reliable information whether Israel possesses nuclear arms or not."¹⁴³

The idea of balance of terror, and the need to clear out any dangerous stimulus of aggression before the Middle East becomes multi-nuclearized, was expressed by Israeli leader Shimon Peres in 1984. "[I am] Deeply worried about the future of the region, when nuclear weapons would be introduced to the Middle East in 10 to 15 years. Therefore, we must work for peace with Egypt, Jordan, and Syria."¹⁴⁴ Mr. Peres indicated an awareness that Israel is expected to lose its monopoly at some future point, and thus should strive to take advantage of the current situation and pursue peace treaties with its neighbors, or at least add a diplomatic process to the military-political conflict. Shlomo Aronson, when serving as Moshe Dayan's adviser, argued that a regional balance of terror will develop, as it did between the superpowers. He

¹⁴³ Quoted in *Ma'ariv*, 24 March 1983.

¹⁴⁴ Interview in *Ma'ariv*, 29 June 1984.

stressed the need for clearly defined red lines which "make the war an unattractive political option. . . . The Arabs and Israelis will always respond by the most logical option" (Krossney 1982, 291).

To sum up, Israel's nuclear deterrence has succeeded in making the other side aware of the costs and political options involved. As Quester asserted, Israel convinced Arab states to refrain from aspirations such as eliminating it in one military move. Israel's deterrence, he noted, has succeeded in instilling Ben-Gurion's hope in the minds of Arab leaders. It is the wish that Arabs need to acknowledge the well being of the state of Israel. Hence, the Egyptians signed the peace treaty with Israel and "gave up their dream" (Quester, cited in Brosh 1990, 88, n. 157). On the other hand, Israel's ambiguous deterrence failed by neglecting the Arabs' political needs, as in the balance of political interests, and therefore allowed for the 1973 War.

The concept of 'ambiguity' or 'opacity' is somewhat misleading in its application towards the Arabs. As demonstrated below, Arab leaders seem to perceive the nuclear threat and be clear about it.

D. Nuclear Consciousness

A balance of terror is a presumptive situation of dyadic opponents which obtain nuclear capability and retain mutual deterrence. Stability stems from a balance of power and second strike capability. In such a situation of nuclear balance of power, the actors are expected to detect some newly emerging perceptions and awareness of the nuclear status, especially consciousness of the horrifying outcomes of nuclear use. A nuclear threshold in the minds of leaders is anticipated. Although the Middle East has not reached this stage yet, it is important to search for, and identify, gleams of nuclear consciousness and sensitivity to the involved costs. The absence of nuclear consciousness would make deterrence less effective and more dangerous. It is this consciousness that creates solidarity among belligerents against the use of nuclear weapons (Allison et al. 1985). Statesmen realize that using nuclear arms means committing suicide (Carnesale et al. 1983).

In a multi-nuclear Middle East, all parties are prone to acquire the ability to inflict unacceptable punishment upon the other. This assumption is based on the high vulnerability of the involved actors, on the one hand, and the advanced delivery systems they possess, on the other. Thus, the ensuing fear in the hearts of leaders will enhance a balance of terror even in a system of lesser second strike capability, like in the Middle East (Feldman 1982).

As may be inferred from the following declarations of

regional leaders and scholars, Middle Eastern elites are developing nuclear consciousness and awareness of the implied vulnerability and high costs. Nuclear deterrence is effectively sustained, and nuclear socialization is in motion. The succeeding findings show that Arab leaders perceived the implied Israeli nuclear threats and that they eliminated the annihilation of Israel as a feasible political option.

Taysir Nashif, an Arab scholar, stated that "Arabs think that Israel has developed a nuclear capability. . . . The Arab confrontation states feel threatened. . . many have observed a marked change in Arab attitudes toward Israel's nuclear program" (Nashif 1984, 25). Another Arab writer, Colonel Muhammad Mustafa, wrote in an Iraqi daily:

Atomic weapons would serve as a permanent deterrent to the Arabs, and would compel them to avoid provocations. . . . Israel's acquisition of nuclear weapons decreases the value of conventional weapons in the hands of the Arab armies and the importance of their numeric superiority (Cited in Ben-Zur 1961, 21).

The following expressions of regional statesmen show their nuclear consciousness and sensitivity to high costs. They are presented according to states. The evidence of nuclear awareness on the Israeli side seems thinner than among Arabs. It is mainly because Israel does not face real nuclear threats from its adversaries. Israel enjoys a regional

nuclear monopoly and its leaders are disturbed by Arabs' nuclear ambitions. Therefore, Israeli statesmen are showing awareness only in justifying the quest for the preservation of the status quo.

Israel: Nuclear awareness in Israel has been expressed by leaders in many occasions. Minister of Defense Ariel Sharon said that Israeli nuclear deterrence would encourage a regional arms race, thus changing the scope of Arab threats. The Arabs' desire to destroy Israel might be revived, and in a multi-nuclear region, the threat to Israel's physical survival would become real.¹⁴⁵ Ezer Weizman, a former Minister of Defense, argued that the Arabs' ability to absorb a nuclear attack is much higher than that of Israel. Thus, Israel will be better off if it reaches a peace treaty before the Arabs acquire nuclear weapons.¹⁴⁶ Moshe Dayan suggested that nuclear deterrence would stabilize the status quo (Shakiki 1986). Yet, Israeli leaders in most cases perceived the possibility of nuclear capability in Arab hands through pessimistic eyes, through their biased images of the holocaust. This is, again, an example of thinking in conventional terms, which probably stemmed from the fact that the other side did not have a strong nuclear potential. Moshe Dayan, however, showed nuclear consciousness and grasped the deterring effect of nuclear capability.

¹⁴⁵ *Yediot Aharonot*, 28 January 1977.

¹⁴⁶ *Yediot Aharonot*, 25 October 1991.

Egypt: Egyptian awareness of the Israeli nuclear threat appeared as early as the year 1960. President Gamal-Abdul Nasser revealed then that Egypt was not sure of Israel's capabilities or intentions. He used phrases like "if Israel is capable" and "when we make sure that Israel is making an atomic bomb."¹⁴⁷ The suspicion grew stronger by 1966, when Nasser condemned Israeli efforts to build an atomic bomb and threatened to take 'preventive' actions. He phrased it "if Israel goes ahead"¹⁴⁸ indicating that he was aware of its capability but unsure of its intentions (Shakiki 1986).

Egypt's Minister of War, General Abdel-Ghani Ghamasi, referred to the nuclear bomb as 'a weapon of total destruction'. He argued that introducing it to the region "would create a new and dangerous situation."¹⁴⁹ Egyptian Colonel Ali Ka'wush said, "The October 1973 war led Israel to concentrate on nuclear weapons and to wave [the nuclear threat] in the Arab's face."¹⁵⁰ The Foreign Minister, Ismail Fahami, called it 'the terrible weapon' and said that this serious matter has introduced Egypt to the question of "to be or not to be."¹⁵¹ Later, he argued that a mutual nuclear

¹⁴⁷ *Al-Ahram* (Cairo), 24 December 1960.

¹⁴⁸ *Al-Ahram*, 21 February 1966.

¹⁴⁹ *Al-Ahram*, July 1975; *Al-Hudath* (Beirut) 23 January 1975.

¹⁵⁰ *Al-Siyasah Al-Dawliyah* (Cairo), January 1976.

¹⁵¹ *Al-Ahbar* (Cairo), 18 June 1974; *Al-Ahram*, 30 April 1976.

capability would assure the non-use of the weapon.¹⁵²

President Anwar Sadat referred directly to the issue by estimating the potentially high costs for Egypt in 1 million casualties. Earlier, Sadat expressed some nuclear sensitivity and explained that "in five to six years, Arab military power might be neutralized by Israel's nuclear threat."¹⁵³ It should be noted, that a part of any explanation of Sadat's peace initiative "could easily be traced to the persistent rumors of Israeli nuclear weapons, as the Egyptian realized that any conventional war defeat of Israel would lead to nuclear retaliation against Cairo and Alexandria and the Aswan Dam" (Quester 1983, 560).

An Egyptian periodical argued that the aim of Israel's nuclear arsenal is "to clarify to the Arab world that [Israel's] existence in the Middle East is a fact."¹⁵⁴ Egyptian chief of staff, Muhammad al-Ghazala, stressed that such a weapon in the hands of Israel "poses a real danger on the Arab world. . . . Its efficiency endangers Arab cities, population centers, and industrial infrastructure."¹⁵⁵

An Egyptian newspaper reflected on the nuclear issue as 'a mutual hazard of total destruction'. Similarly, an Egyptian commentator argued that a nuclear war would be a

¹⁵² *Al-Sha'ab* (Cairo), 17 February 1981.

¹⁵³ *Al-Ushu Al-Arabi*, 2 July 1977; *Ma'ariv*, 12 November 1976.

¹⁵⁴ *Al-Ahram Al-Iktazadi* (Cairo), September 1976.

¹⁵⁵ *Al-Kbas* (Kuwait), 11 September 1980.

"hopeless suicidal war." He stressed that nuclear weapons were invented for the purpose of deterrence, by threatening to bomb innocent cities and population centers. "The use of nuclear weapons against vital assets and crowded Arab cities would confront Arab states with enormous dangers."¹⁵⁶

Syria: As early as 1966, Prime Minister Hosni Za'im declared, "We will not give up the war even if Israel obtains the A-bomb" (Brosh 1990, 104). Foreign Minister Ibrahim Makhus referred to nuclear weapons as the 'paper tiger' and used the Vietnam and Algeria analogies to describe a future war between the Arab states and Israel.¹⁵⁷ This attitude was modified during the 1970s.

Colonel Haytham Al-Ayubi, head of the military research department of the Palestinian Research Center in Beirut, argued that a nuclear bombing of the Aswan dam in Egypt would cause a gigantic water flood, one which would overflow the Nile Valley, destroy all cities and villages there and pollute the land with radioactive fallout.¹⁵⁸ He foresaw a similar future for Syria in case of another general war with Israel. Thus, he recommended that Syria should continue the armed struggle without endangering the survival of Israel. In 1989 Al-Ayubi argued that the Middle East had entered the phase of

¹⁵⁶ *Al-Ahbar*, 4 December 1974; "Israel, Egypt and the Nuclear Bomb", *Al-Talia'a*, September 1975.

¹⁵⁷ *Al-Masr* (Cairo), 16 December 1966.

¹⁵⁸ *Al-Usbu' Al-Arabi*, 1 & 8 July 1974.

'proportional balance of terror', which is an obstacle to Israeli aggressiveness and an opening to a just peace.¹⁵⁹

Iraq: Since the 1960s Iraq has been striving to counter Israel's nuclear capability, first through Arab joint efforts and then individually. The Iraqi foreign minister used the phrase "Hiroshima bombs"¹⁶⁰ to describe his awareness of the costs involved, and stated that Iraq will continue with nuclear development in order to serve its political interests and to lead the Arab world in a war against Israel. Saddam Hussein declared in 1980, "We will acquire the atom, and then Israel will not interfere in our acts. The power of Iraq is the power of the Arabs, and the power of the Arabs is the power of Iraq."¹⁶¹ Since that declaration, Iraq's attitude toward nuclear development has not changed much, not even in the light of the Gulf war.

Two scholars, Evron and Feldman have analyzed Arab responses to Israel's nuclear programs. Evron (1973) found that until the year 1967, there were many Arab (mostly Egyptian) threats of preventive war should Israel get the bomb, and many declarations on the desire to annihilate the state of Israel. Feldman reported that he had found no reference to an Arab preventive war considered seriously after 1973. Furthermore, he reported wide Arab concerns about the

¹⁵⁹ *Al-Ba'ath* (Damascus), January 1989.

¹⁶⁰ *Yediot Aharonot*, 15 June 1981.

¹⁶¹ Quoted in *Al-Iutan* (Kuwait), 27 July 1980.

"paralyzing effect of the possible Israeli nuclear advancement" (Feldman 1982, 76), concerns that made war against Israel too risky. In regard to Israel's nuclear program, Evron (1973) cited Egyptian calls for preventive war against Israel, made by President Gamal-Abdul Nasser and his adviser Muhammad-Hasnin Heikal, in 1965. Feldman (1982) remarked that this option was abandoned, thus he could not find any similar Arab reference to preventive war.

Arab responses to Israel's nuclear program since the early 1970s may be classified into four categories:

1. The first response was a demand that Israel sign the NPT, together with an encouragement of a regional nuclear-free zone. President Anwar Sadat made this demand when interviewed by ABC on 27 February 1977. Foreign Minister Ismail Fahami put the NPT and international nuclear inspection as a precondition for a peace arrangement in the Middle East (Feldman 1982, 77). During the late 1970s peace negotiation, Foreign Minister Boutros Ghali stressed that if Israel intended to emphasize its peaceful intentions, it should sign the NPT.¹⁶² At the same time, Egypt and Iraq called on the U.N. to declare the Middle East a 'nuclear-free zone' (Feldman 1982, 77). In 1991, the Syrian foreign minister said that Israel must be forced to give up its nuclear weapons, and, since the U.S. helped Israel acquire the bomb, "The Americans should make it disarm."¹⁶³

¹⁶² *Ma'ariv*, 17 May 1979.

¹⁶³ Quoted in *Economist*, 19 October 1991.

2. Another response was an attempt to obtain nuclear guarantees, primarily from the Soviet Union and Pakistan. Egypt and Syria sought Soviet guarantees but were refused.¹⁶⁴ Yet, Soviet nuclear guarantees were believed to be granted tacitly in 1980.¹⁶⁵ Shortly before, the Syrian foreign minister claimed that "the Soviet Union will defend Syria in case of Israeli nuclear threat."¹⁶⁶ Yet, Heikal¹⁶⁷ argued that Soviet nuclear guarantees are useless in countering Israel's nuclear capability, since they are balanced by the involvement of the U.S., as during the 1973 war.

3. The third response was to develop Arab deterrence measures, especially chemical and biological weapons. These weapons were used by Egypt in Yemen in 1962, and by Iraq against Iran and the Kurds in the late 1980s. Egypt accumulated a vast arsenal of nerve gas to deter Israeli nuclear threats.¹⁶⁸ Sadat warned that Egypt's weaponry was capable of retaliating against an Israeli nuclear strike.¹⁶⁹ Minister of War Abdel-Ghani Ghamasi asserted that "Egypt has enough of the other types of weapons of mass extermination and it has the capability of retaliating against a Israeli nuclear

¹⁶⁴ *Al-Sha'ab* (Cairo), 17 February 1981.

¹⁶⁵ *International Herald Tribune*, 10 November 1980.

¹⁶⁶ *Al-Hamishmar* (Tel Aviv), 7 October 1980.

¹⁶⁷ "The Bomb", *Al-Ahram*, 23 November 1973.

¹⁶⁸ *The Nation*, 8 June 1976.

¹⁶⁹ *Christian Science Monitor*, 18 August 1980; *Yediot Aharonot*, 5 October 1976; *Al-Usbu Al-Arabi*, 2 July 1977.

blow by making use of these weapons."¹⁷⁰

4. Lastly, Arab states sought to advance their nuclear programs. Nasser promised in 1960 that if Israel produces nuclear weapons, so would Egypt.¹⁷¹ Later in 1965, Egyptian spokesman Heikal, called for an Arab united effort in developing nuclear weapons as a response to Israel's initiative (Evron 1973). Sadat promised: "If Israel introduces nuclear arms to the Middle East, we will find the way to acquire such a weapon."¹⁷² Foreign Minister Ismail Fahami declared that Egypt is capable of exploding a nuclear device, and has no technical or scientific barriers to produce an A-bomb.¹⁷³ Syrian President Hafez al-Assad said that because Israel is on the way to acquiring nuclear weapons, the Arabs have two options: to prevent Israel from obtaining the bomb or to get their own nuclear weapon. He thought the second option is more promising to the Arabs (Feldman 1982, 79). Nuclear aspirations have also been expressed by Libya¹⁷⁴ and Iraq. Libya in part financed the Pakistani nuclear program and was expecting to receive in return some Pakistani bombs.¹⁷⁵ Saddam Hussein called all "peace-loving nations to

¹⁷⁰ *Akhbar Al-Usbu'* (Amman), 14 October 1976.

¹⁷¹ *Al-Ahram*, 24 December 1960.

¹⁷² *Ha'aretz* (Tel Aviv), 9 April 1976.

¹⁷³ *Washington Post*, 1 May 1976.

¹⁷⁴ *Washington Post*, 30 July 1979; *Daily Telegraph*, 7 December 1978.

¹⁷⁵ *Newsweek*, 9 July 1981; *Foreign Report*, 9 August 1979.

help the Arabs in getting nuclear weapons in order to balance Israel's nuclear capability."¹¹⁶ Feldman alluded to Heikal as the strongest proponent of Arab nuclearization. Heikal repeatedly warned against Israel's expanding nuclear capability, and called for a proper Arab answer by developing a nuclear might of their own (Feldman 1982, 80).

The above findings support the argument that the belligerents are developing nuclear consciousness and sensitivity to the enormous costs involved in nuclear exchange. They join the discussed cases of Arab restraint in the 1973 War and Iraqi hesitation during the Gulf War. Deterrence is assumed to be strengthened by an overt nuclear strategy (Feldman 1982; Rosen 1977). Arab states perceive the Israeli nuclear arsenal as an acute threat, one which demands a proper Arab answer. It is expected, therefore, that Arab nuclearization efforts will continue, on the one hand, while regional nuclear consciousness and carefulness are enhanced, on the other. A multi-nuclear Middle East may be envisioned on the horizon, one with great emphasis on deterrence. Israel, which enjoys a nuclear monopoly, did not choose to use the weapon for purposes other than deterrence. And Arab leaders, who almost never have expressed the wish to use it for any purpose other than balancing Israel, are not anticipated to manipulate the weapon for other objectives. Thus, a stable regional balance of terror is expected, based upon effective deterrence.

¹¹⁶ *Washington Post*, 24 June 1981.

Although some Arab leaders have talked about Arab superiority in a multi-nuclear Middle East,¹⁷⁷ these expressions seem to be nothing but propaganda. The idea of an Arab leader ordering a suicidal nuclear attack on Israel is inconceivable, since his country's vulnerability is enormous. It is hard to imagine an Egyptian leader taking advantage of the Arab 'strategic depth' (as some statesmen have referred to it) and ordering a nuclear strike on Israel, while every day at 2:00 PM some twenty-five percent of his entire population is concentrated in Cairo (Feldman 1982). As noted earlier, it is the uncertainty concerning the attacker's capability of disabling the nuclear weapons of the other side which imposes caution on leaders. The great vulnerability of regional actors, and the hazardous results of a possible nuclear retaliation, encourage carefulness, hesitation, and moderation among leaders.

The aforementioned expressions of Arab leaders demonstrate that nuclear socialization is at work and that leaders develop consciousness and sensitivity to the high costs at stake.

A regional [nuclear] balance of terror would be a synonym for security. . . . The consequence would be a mutual fear of the potential for total destruction, one which conserved the status quo. . . . The balance of terror would work [in

¹⁷⁷ Ghamasi, quoted in *Yediot Aharonot*, 5 October 1976; Assad, quoted in *Guardian* (London), 28 April 1977.

the Middle East] the same as between the superpowers.¹⁷⁸

Heikal has strongly recommended Arab nuclearization. "Deterrence is the only effective strategy for this age, in the sense that the possession of this type of weapon by both sides in a conflict is the only guarantee against their use."¹⁷⁹

Additionally, deterrence in a multi-nuclear Middle East would continue to be in favor of Israel because the balance of determination tends to its side. The side that is defending its own survival is much more determined to use the weapon as a last resort than the side which wishes to gain political benefits. So, in a case of Arab nuclear attack on Israel, and a probable annihilation of the state, it is almost certain that Israel would retaliate in kind as a last resort. This common-sense knowledge is liable to make Arab leaders more careful and thus hesitant to use the weapon for anything other than deterrence. Heikal rightly perceived that insight when he said that "Israel has nuclear weapons, but she will not use them, unless it feels suffocated" and "if it feels threatened it would commit suicide."¹⁸⁰ King Hussein of Jordan agreed: "In my opinion the Israelis would not use atomic weapons. . .

¹⁷⁸ *Al-Ahbar*, 4 December 1975; *Al-Zi'ad* (Beirut), 26 February 1976.

¹⁷⁹ *Ah-Aharam*, 23 November 1973.

¹⁸⁰ *ibid.*

unless they faced annihilation."¹⁸¹

Analyzing trends of nuclearization in the Middle East leads to evidence of a developing nuclear balance of terror and effective nuclear deterrence.

When Israel, some 25 years ago, was first suspected of seeking nuclear weapons, there was little evidence of Arab willingness to tolerate any coexistence at all with the Zionist state. . . . Much has changed in these three decades [in light of] Israeli conventional military victories. . . . Much of the Arab rhetoric has changed in light of this demonstrated Israeli conventional strength and, almost certainly, in light also of the rumors and assumptions about an Israeli nuclear option. . . . And the nuclear possibility conversely plays a significant role in reducing the relevance of Arab sentiments [of annihilating Israel] (Quester 1983, 548).

This is so, despite inherent regional dissimilarities to the superpowers' capabilities and position. Nevertheless, and as in the superpowers' context, some level of cooperation is required in order to avoid the undesirable. Accommodation and moderation are likely to continue because existential nuclear deterrence requires communication and management of crises through mechanisms of arms control .

¹⁸¹ *Chief Executive*, October 1977.

V. Survival Through Accommodation

Nuclearization in the Middle East takes place in a region of constant conflicts and frictions, security dilemmas, arms races, and frequent resort to force. Deterrence and nuclear balance of terror may not be sufficient in such a troubling region. The persisting danger of escalation in a continuous state of war may encourage the temptation to 'push the button', either as a result of misperceptions and misunderstanding of the current situation or because of conventional defeat (Kahn 1965). Hence, political distress or unacceptable harm to an actor's political interests might bring about the failure of deterrence and the use of force, and strengthen the danger of escalation (Evron 1987).

There is no conceivable way of preventing an actor who wishes to go to war from doing so. Yet, in times of conflict, the embedded dangers of unintentional war, escalation, misperceptions, and even catalytic war, are present. These endangerments could drive the belligerents toward unwanted situations. In order to avoid such risks of deterioration, conflicts should be restrained and moderated. This aim may be achieved through the many forms of conflict management, conflict reduction, and conflict resolution. Cooperation among the adversaries is a necessity, and any form of arms control will do. Since nuclear deterrence requires carefulness and moderation, the adversaries may attain a peaceful coexistence in the nuclear age through accommodation.

As early as 1948, Israel's first Prime Minister, David

Ben-Gurion, proposed cooperation between Israel and the Arab states in a scheme of political-military maneuvers aimed at an Israeli-Arab Alliance (Aronson 1992). Such an alliance would have been formed once the Arabs accepted Israel's independence as a *fait accompli*, and realized that cooperation is in the interest of both sides. Ben-Gurion's proposition remained a wishful thinking. Cooperation gave way to six bitter wars and uncountable incidents of border clashes.

Israel and Egypt signed peace accords in 1979, and since then they have maintained relatively normal diplomatic relations. Egypt withdrew from the war cycle against Israel, a withdrawal that was maintained during the 1982 Lebanon War and the 1990 Gulf War.

Other Arab states coexist with Israel, in relations of cold war. Lebanon, when still a sovereign state, had never participated in an Arab-Israeli war. Jordan maintains 'de facto' peace relations with Israel albeit it participated in the 1948 and 1967 wars, and its leaders frequently meet with Israeli leaders. Israel helped Jordan against other actors many times, such as in 1970 when the Syrian army attempted to march into Jordan. Syria, since 1974 and with a break of one month during 1982 (in Lebanon) conducted relations of cold war with Israel along the Golan Heights border.

The Arab confrontation states joined Israel, the Palestinians, and the superpowers in the Madrid Conference of 1991. This act signaled, in the eyes of Ezer Weizman, "One small step in the long journey to a comprehensive peace treaty

between the belligerents."¹⁸⁷ The rationale behind this belief, he explained, is nuclearization. The strongest evidence of nuclear consciousness and readiness to accommodation can be found in the multilateral arms control talks which were launched in Madrid. Peace negotiation has continued since then in Washington and in the region.

Arms control measures can be envisaged as a part of the peace process. As demonstrated by the Israeli-Egyptian peace treaty, it was quite easy to negotiate tension-limitation measures such as demilitarization of border zones, international policing or inspection of sensitive points, and communication links (hot lines) between the parties as part of any political settlement package. Furthermore, one may notice that the international 'peace forces' stationed between Israel and Syria since 1974, contributed to peaceful relations between the two along the Golan Heights lines for the last twenty years. And this quiet was kept despite the continuing state of war between the two actors and their clash in Lebanon.

There are important precedents for explicit and tacit arms control agreements in the Middle East. Such coercive arms control measures were the U.N. limitations of arms transfer of 1948, the Tripartite Declaration of France, Britain and the U.S. of 1950 which established the Near East Arms Coordinating Committee (Evron 1977). These arrangements were mostly imposed by powers and the U.N., in order to stop,

¹⁸⁷ Quoted in *Yediot Aharonot*, 25 October 1991.

regulate or limit wars and arms transfers.

In spite of the six major wars,¹⁸³ the regional belligerents were always capable of reaching cease-fire agreements, on every occasion under the external pressure of the superpowers. Israel and the Arab confrontation states went further by creating demilitarized zones to reduce tensions and separate forces. Agreements of this sort had been reached in as early as 1949. Evron (1977) mentioned that the armistice agreements signed in 1949 between Israel and Egypt and Israel and Syria stipulated the creation of very small buffer zones along the borders. These zones tended to be unsatisfactory and became areas of continuous friction, yet the adversaries have demonstrated their willingness to negotiate and reach arms control agreements.

A greater success was achieved between 1957 and 1967 in the Sinai peninsula. This area was declared a demilitarized zone after Israeli withdrawal, and was held under the auspices of U.N. peacekeeping forces. The Sinai peninsula demilitarized zone was an effective arms control measure because it

Diminished the possibility of direct contact between [the two armies] thus, decreasing the chances of accidental war or of escalation from a local military initiative. It added an important psychological barrier to any Egyptian decision to

¹⁸³ In 1948, 1956, 1967, 1969 (war of attrition), 1973 and 1982.

violate the status quo and supplied a crucial warning period (Evron 1977, 10).

Tacit understandings were several in the context of the Arab-Israeli dispute. One such outstanding agreement was reached between Israel and Egypt (but not with Syria) at the outset of the October 1973 war. In spite of the harsh fighting between the sides, both parties preferred not to bomb each other's civilian targets, possibly due to Sadat's threat that he would use Scud missiles against Israeli cities if Israeli aircraft attacked Egyptian cities and other targets in the heartland of Egypt. Another example of tacit agreement is the one between Israel and Jordan during the 1948 war, stating that fighting would be limited to the area over which they had conflicting demands, Jerusalem and the road leading to it, and would not extend to other parts of the long frontier between the opponents. Israel and Jordan had other tacit agreements during the 1967 war (which held for three days before they collapsed), and during the 1973 war--of not joining the fighting. Similar self-imposed restrictions were reached during the Lebanon War of 1982 with Syria concerning the front along the Golan Heights border.

The Egyptian-Israeli 'Kilometer 101' agreements of 1974-1975, which preceded, and led to, the later 1977 peace initiative between the two, may give us a hint about futuristic measures of arms control in the region. In this agreement, the sides negotiated measures of avoiding surprise

attacks and specified sufficient intelligence-gathering and surveillance methods, demilitarization of buffer zones and restrictions on deployment of forces, agreements on no-first-use of forces, and in case fighting did break out, no counter-city attacks (Evron 1977).

The Egyptian-Israeli peace treaty, by all means, stands as a model for possible cooperation and accommodation between enemies in the Middle East. Arriving at the negotiating table from strictly self-help interests, the two sides were able to leave aside the deep bitterness and longstanding fears and security dilemma, and cooperate in order to achieve in 1979 what six years earlier they had considered to be unthinkable.

The strength of the peace treaty was demonstrated during the Lebanon war when Egypt maintained neutrality and during the Gulf war when Egypt overtly supported Israel and cooperated with the U.S. against Iraq. Despite the repeated accusations of maintaining a 'cold peace', Egyptian-Israeli relationships are stable and cooperative in nature, and the two parties have developed economic ties in the fields of textile, cement and fertilizer industries (Starr 1983).

Since the 1970s Arab leaders have urged U.N. and other international forums to work towards a nuclear-free zone in the Middle East. The notion of a nuclear-free zone was first put forward in 1974 by Iran, which was soon joined by Egypt. Thereafter, Israel had also recommended the establishment of a Middle Eastern nuclear-weapons-free-zone along the lines of

the Treaty of Tlatelolco¹⁸⁴ as an alternative to NPT accession (Reiss 1988). Obviously, the pre-conditions of the two parties for such a zone diverged on many aspects. Acting in response to the U.N. resolution calling for a regional nuclear-free zone under the NPT and sponsored by Egypt and Iran in November 1974 (Epstein 1976), Israel supported the concept but proposed direct consultation with Arab states (in order to gain their official recognition) on the matter, without the immediate acceptance of the NPT (Inbar 1977), and strove to include Pakistan in such an agreement (Evron 1979). Yet James Leonard, a former U.S. ambassador to the Conference on Disarmament in Geneva and representative to the U.N., who was appointed by U.N. Secretary General to study the issue, concluded that the general attitude of the parties toward nuclear-weapons-free zone (NWFZ) was positive. "Nevertheless, it will take many years, perhaps decades, to fully establish a NWFZ in the Middle East" (Leonard 1991, 10).

Many regional leaders identified the need for cooperation and arms control in a nuclearized Middle East. Heikal, who correctly perceived the newly emerging nuclear reality, called for cooperation under nuclear deterrence. In regard to potential Palestinian aggression which might shake stability, he concluded, it will be the role of the deterred Egypt and Syria to control the Palestinians in order to avoid tensions

¹⁸⁴ The treaty permits the use of nuclear technology for peaceful purposes, under the auspices of IAEA in Latin America (Leonard 1991).

with Israel.¹⁸⁵ Iraqi Saddam Hussein told a visiting American congressional delegation in mid-April 1990 that he was prepared for mutual disarmament with Israel of all weapons of mass destruction.¹⁸⁶ Israeli Prime Minister Yitzhak Shamir retorted that he was ready for direct arms control talks with the Arab states in the spirit of Israel's past proposals for a nuclear and chemical weapons-free Middle East.¹⁸⁷ Although these two last statements are more of a lip tribute than intentions of the heart, they have advanced the issue on the regional and global agenda.

Any agreement on a nuclear-free zone, or other arms control arrangement, is liable to collapse unless accompanied by Arab-Israeli settlement of the core disputes in the center of the conflict: the Palestinian question and the occupied territories. Stability, as declared by Deputy Minister of Defense Mordechi Gur,

Can only be achieved by reaching a comprehensive peace in the region constructed on two basic elements: a solution to the Palestinian problem, and the creation of a balance of military power--one that might even be termed a balance of military terror or fear (Gur in Gold 1990, 9).

The settlement of these disputes would then lead the opponents to deal directly with tensions among them, and to

¹⁸⁵ *Al-Anuar* (Beirut), 12, 15, 19 June 1977.

¹⁸⁶ *Ma'ariv*, 13 April 1990.

¹⁸⁷ *The Jerusalem Post*, 15 April 1990.

resort to disarmament and political settlements. A long journey starts with one small step. As aforementioned, such readiness was observed in the beginning of the multilateral arms control talks in Madrid. The first steps needed are confidence building and arms control measures, cooperative reduction of risks, and accommodation toward peace. It seems that the presence of nuclear capability in the Middle East would accelerate the readiness of the parties toward these steps. "No region in the world is in greater need of effective arms control than the Middle East. No region in the world manifests such a deadly combination of unresolved disputes and enormous military forces ready to be unleashed" (Feldman in Gold 1990, 17).

CHAPTER 5

NUCLEARIZATION IN SOUTH ASIA

I. South Asia as a subordinate system

The region of South Asia is an area of many tensions and disputes, mainly between India and Pakistan. This conflicting dyad of SNPs participates in a long standing conflict which started in 1947. The process of nuclear proliferation in this conflict-prone region, thus, is relevant to this analysis.

India and Pakistan are the major actors in South Asia. They are involved in most of the conflictive interactions in the region, mainly in the prominent dispute over Kashmir. The Kashmir War of 22 October 1947, was the first military clash between the two newly born states. The war was brought to a conclusion on the first day of the year 1949 (Ganguly 1986). Since then, the region of South Asia witnessed two other major wars between India and Pakistan in 1965 and 1971, and a war between India and China.

There are other conflicts in the region, such as India's intervention in Sri Lanka, the regional dispute over water rights and refugee movements between India and Bangladesh¹⁹⁸,

¹⁹⁸ Nepal is also involved in the regional dispute over water rights.

and between Pakistan and Afghanistan over the people and areas of the north-west frontier. Nevertheless, These conflicts are secondary to the tensions between India and Pakistan.

The Indo-Pakistani tensions reflect mutual geographical claims, hegemonic and ideological rivalry, and struggle for power. At the background of the conflict stands the religious factor. Pakistan is an Islamic State. India, although a secular state, is dominated by a majority of Hindus. In Kashmir, however, there is a majority of Muslims ruled by a Hindu Monarch. Thus, both India and Pakistan perceive Kashmir as strongly affiliated with them. Aside from Kashmir's strategic importance to the belligerents, Pakistan claimed this territory on the basis that over three-fourth of its population was Muslim, and India demanded Kashmir on the ground that its ruler has been Hindu (Stoessinger 1974).

The influential involvement of China, an outsider actor in the region, is significant to regional politics mainly because of its impression on nuclear proliferation in the region. India's defeat by China in 1962 and the remaining Chinese nuclear threat to India, on the one hand, and Chinese tacit assistance to Pakistan, on the other, influence security considerations and nuclear aspiration of the two regional adversaries.

Nuclear ambitions had been introduced to the region during the 1960s by India. Indian ambitions stemmed from growing concerns over the nuclear threat from China, and aspirations for regional hegemony and international

recognition as a power. Later on, the growing nuclear threat from Pakistan enhanced the need for an Indian nuclear program. Pakistan, out of a dilemma of security, and in order to compensate for its conventional inferiority, craved to develop nuclear capability as well. Both states felt a political need for nuclear deterrence (Betts 1979).

South Asia, as a subordinate system, is characterized by three significant elements. First, in relation to the configuration of power, it is a bipolar system with nuclear potential. Second, there are recognizable conflicting patterns of political interaction. Third, political activity between India and Pakistan is central to all political interactions within the sub-system's boundaries. The actors within the South Asian region are India, Pakistan, Afghanistan, Bangladesh, Bhutan, Nepal, and Sri Lanka.

The first characteristic of the South Asian system, the distribution of capabilities between India and Pakistan, regulates the bipolarity of the region. India is more powerful in terms of better organized economy, greater human resources, dominating conventional army, and nuclear capability. Pakistan, although traditionally behind, strives to equalize India's superiority with its nuclear program and powerful allies. India and Pakistan tend to perceive each other's foreign policy and actions as conflicting and threatening. The other actors of the sub-system are marginal to the region's distribution of capabilities. Hence, the system of South Asia is pyramidal in kind, one in which India

is the sole regional power which has relations with all other units, while Pakistan is ranked as a 'middle power'.

The second characteristic of the system is the centrality of Indo-Pakistani interactions in the region. Several patterns of interactions may be discerned:

1. Interactions are conflictive in kind. The use of force is common, three major wars were fought and many border clashes occurred between the two countries.
2. The actors intervene in each other's local affairs, usually by encouraging rioting and anti-regime activity.
3. The centuries-old religious conflict between Hindus and Muslims stands at the core of foreign policy, although statesmen resorted to other reasons to justify political acts.
4. There is a constant struggle of hegemony between the actors. Indian leaders have traditionally understood their country as involved in regional political interactions and influencing the outcomes of political activity in the region. The Pakistani elite, especially the army, perceive Pakistan's role as resisting India's regional dominance (Ispahani 1989).
5. The rivalry and activity of the United States, the former Soviet Union, and China influenced political interactions in the region.
6. There is a weak internal organization of institutions in the states of the region. India and Pakistan are politically vulnerable to external intervention. While Pakistan is organized around the principle of Islamic unity, India is constituted on secular, federative lines. It can only exist

by cultivating harmony among the various large religious groups within its borders, including more than 60 million Muslims. As such, political institutions in both countries are fragile and exposed to external interference. Buzan (1983) referred to the weakness of the states and argued that most of them face substantial security threats arising within their own boundaries. Because of religious, national and historical patterns which run across state boundaries, these domestic problems cannot be separated from relations among the states.

As for the third element, political interactions in the region determine the boundaries of the sub-system. In the core area of the South Asian region stand India and Pakistan. Afghanistan, Bangladesh, Bhutan, Nepal, and Sri Lanka are located in the periphery. China, although involved and influencing political affairs in the region, is located in another region and is an outsider to the South Asian sub-system.

There is one prominent organizing principle of politics in the region. This is the continuous conflict between India and Pakistan, especially over Kashmir. All other political relations are secondary to this severe conflict.

The dispute over Kashmir reflects the internal instability of the two actors. It has embittered relations between India and Pakistan following partition in 1947, and provided a major motive for two of the three wars fought between them (1947 and 1965). The Kashmir issue also

symbolized the power rivalry between India and Pakistan, in which the former strived to assume the status of hegemonic regional power, while the later struggled to keep itself from being overawed by the greater India (Buzan 1983). The tension between the two countries was later evolved into a nuclear rivalry, one which is intimidating the region as well as calming it down.

As aforementioned, the conflict between India and Pakistan is rooted in religion. So long as India remained under the British Crown, the conflict between Hindus and Muslims was relatively dormant, although the two religions--which regard each other as anathema--waged their own separate struggles for independence against Britain. Thus, each religion received its own sovereign entity in 1947. One result was the most massive population exchange in history (Stoessinger 1974).

Another aspect of the conflict between the two rivals was the dispute over Kashmir, a bi-product of the British partition of Colonial India which overshadowed all other phases of the bitter conflict. India demanded Kashmir on the ground that its ruler was Hindu, and justified this demand as essential for India's security. "India without Kashmir would cease to occupy a pivotal position on the political map of Central Asia. Strategically, Kashmir is vital to the security of India; it has been so since the dawn of history" (Nehru 1949, 95). Pakistan, on the contrary, claimed Kashmir since about three-fourth of its population was Muslim, and supported

its claim with security reasoning. Prime Minister Liaquat Ali Khan said: "Kashmir is very important, is vital to Pakistan. If I allow India to have this cap on our head, then I am always at the mercy of India" (Quoted in Stoessinger 1974).

In October 1947, a Muslim revolt against the Hindu ruler of Kashmir, with the assistance of Muslim tribesmen invaders, brought about the first war between India and Pakistan. As the desperate Hindu ruler asked India for military aid, India took advantage of the new opportunity to gain control over Kashmir and intervened militarily to stop the invaders. Pakistan reciprocated by moving in to help the Muslim revolutionary forces. The two countries found themselves involved in a bitter war over Kashmir. A cease-fire agreement has eventually reached on January 1949. The 1965 war over Kashmir was inevitable. The quest for security of the two states and their clash in the Rann of Kutch on the one hand, and the Indian frustration stemmed from the Indo-China border war of 1962 on the other hand, both contributed to a greater involvement of the superpowers in the region and to an arms race. Out of this dilemmas of security and regional rivalry, border clashes started, evolving rapidly into a major war between India and Pakistan. The war lasted a few weeks until a cease fire was reached.

The third round in the Indo-Pakistan war cycle erupted in 1971, in a war that brought about the birth of Bangladesh. Pakistan was at the time composed of two wings, in which the people who lived there had nothing in common but their

religion, Islam. As one reporter put it, "The only bonds between the diverse and distant wings of their Muslim nation were the Islamic faith and Pakistan International Airlines."¹⁴⁹ The Pakistani regime's brutal pursuit for order in the troubling eastern wing brought about a flood of Bengali refugees to India. India then went to war against Pakistan in order to stop the flood of refugees, the instability they caused in India, and the financial burden they put upon the Indian government. As a result of this war Pakistan was confronted by defeat and dismemberment, and the search for more efficient methods of security, i.e. nuclear capability, was enhanced (Ghosh 1985).

The conflict between India and Pakistan has many dimensions, including religious and ideological tensions, territorial claims, economic imbalance, natural disasters, nationalist aspirations, refugee migrations, and personality clashes. These conflictive features were translated to a confrontation of national interests.

The added nuclear dimension only exacerbated the conflict. Pakistan, which realized its conventional inferiority, decided in 1971 to launch its nuclear program and to develop capability of nuclear weapons (Ganguly 1986).

¹⁴⁹ *TIME*, 2 August 1971, 26.

II. Nuclear Capability and Delivery Systems

Both India and Pakistan claimed that their nuclear programs are implemented for 'peaceful' purposes. To the time of writing, neither country has chosen to produce nuclear weapons overtly. Yet, it is believed that both states have a nuclear option, i.e., the capability to assemble the bomb in short time, and the necessary systems to deliver a bomb to its target. Moreover, Dunn (1991) expressed the belief that India and Pakistan have both developed a 'bomb in the basement'. Both countries, he argued, now stand at the threshold of unacknowledged possession and deployment of nuclear weapons and may already have crossed it.

For many years, India has enjoyed nuclear monopoly in South Asia. This monopoly was ended in the late 1980s, when Pakistan emerged as a SNP. Spector argued that both states are currently capable of deploying small nuclear forces composed of atomic bombs that could be delivered by advanced fighter-bombers, although India's capabilities are considerably greater than Pakistan's. Yet, "Neither country is believed to have integrated nuclear weapons into its military forces. . . and it is possible that neither has manufactured complete nuclear devices" (Spector 1990, 59).

A brief description of the nuclear capability of India and Pakistan follows.

A. Capability of Regional Actors

India: India's nuclear program is presumed to be the most advanced among all SNPs around the globe. India demonstrated its nuclear capability in 1974 by testing a nuclear device. India has the proficiency to manufacture sophisticated weapons and advanced delivery systems. Due to India's objection to the NPT, its nuclear facilities are unsafeguarded and uninspected by the IAEA.

The main facilities of the Indian nuclear program are the two nuclear power reactors, Madras I and II; the Dhruva research reactor at the Bhabha Atomic Research Center; the BARC plutonium extraction plant which is capable of manufacturing plutonium used in nuclear weapons;¹⁹⁰ and the Tarapur plutonium extraction plant (Spector 1990). India Prime Minister Rajiv Gandhi admitted his country's capability to produce nuclear weapons if necessary.¹⁹¹ Although he argued during the same interview that India does not have, nor does it want, nuclear weapons, a U.S. intelligence source announced that India has assembled highly sophisticated atomic bombs.¹⁹² A year later, CIA Director William Webster announced that there are 'indicators' that India is building a hydrogen bomb.¹⁹³

¹⁹⁰ *NY Times*, 7 May 1988.

¹⁹¹ *Chicago Tribune*, 28 April 1987.

¹⁹² *Boston Globe*, 20 March 1988.

¹⁹³ *Washington Post*, 19 May 1989.

India has developed the Angi ballistic missile which is capable of carrying nuclear warheads of 1 ton payload to a range of 2400 km, and 500 kg to 3500 km, far enough to hit Beijing. Although Indian officials claimed it is not designed for nuclear warheads, the Angi missile is acknowledged by scholars¹⁹⁴ as a potential nuclear delivery system. This is so, since "no country, including India, has ever spent money on long-range rockets simply to explore space. . . . The Angi, therefore, can only be interpreted as a step toward a long-range nuclear strike force" (Milhollin 1989, 35). India's Prime Minister Rajiv Gandhi argued that "Angi is not a nuclear weapon system. What Angi does is to afford us the option of developing the ability to deliver non-nuclear weapons with high precision at long ranges" (Quoted in Milhollin 1989, 31). Nevertheless, it is hard to distinguish between conventional and nuclear uses of the missile. In addition to its modern air force, India leased in 1988 a nuclear-powered submarine from the disintegrating U.S.S.R.¹⁹⁵

Pakistan: Pakistan has been producing weapons-grade uranium since 1986, although its leaders routinely pledge that it does not intend to build the bomb. Yet, Pakistan is widely believed to have the knowledge and ability to produce the bomb (Spector 1988 and 1990). Although Pakistan claims to develop nuclear capability for 'peaceful means', its Kahuta uranium

¹⁹⁴ Spector (1990); Navias (1990; Moshaver (1991)).

¹⁹⁵ *Wall Street Journal*, 6 January 1988.

enrichment plant is capable of supplying material for military purposes (Goldblat, in Simpson 1987). Hence, Milhollin stressed: "I think it is clear that Pakistan has all the components of a bomb. What we are looking at is a failure to put it together. To say that Pakistan does not have the bomb is like saying that a person who has not put bullets in his gun is unarmed."¹⁹⁶

In 1992, Pakistani Foreign Secretary Shahryar Khan stated that Pakistan had the components and the know-how to assemble at least one nuclear explosive 'device'.¹⁹⁷ But the Pakistani Foreign Office at once issued a statement claiming that Khan's statements had been distorted by the press (Thomas 1993, 64). In addition, Pakistan is involved in clandestine purchases of atomic arms parts.¹⁹⁸

As for its delivery system, Pakistan has developed two short-range Haft ballistic missiles, and test fired them in 1989 (Subramanyan 1989). The version II missile can carry a half ton payload, sufficient for a nuclear warhead,¹⁹⁹ to a range of 350 km. Pakistan maintains an advanced fighter-bombers air force, and is seeking missiles and missile knowledge from China.²⁰⁰

¹⁹⁶ Cited in Michael Gordon, "Nuclear Course Set by Pakistan Worrying U.S.", *NY Times*, 12 October 1989.

¹⁹⁷ *Washington Post*, 7 February 1992.

¹⁹⁸ *International Herald Tribune*, 23 July 1984.

¹⁹⁹ *New York Times*, 24 May 1988.

²⁰⁰ *Globs*, 20 November 1991.

In summary, India and Pakistan conduct nuclear programs and are capable of building nuclear weapons on short notice, if not already have them in the basement. The uncertainty about each other's stage of nuclearization contributes to their mutual assessment of each other as nuclear powers. Thus, the nuclear programs themselves imply nuclear threats and contribute to regional deterrence. As the following discussion suggests, nuclear intentions are there, economic resources have been allocated and regional nuclearization is on the way.

B. Survivability of Nuclear Capability

The process of nuclearization, and the design of nuclear posture, is followed by the actor's concerns of surviving a first strike against his nuclear facilities and delivery systems. In South Asia these concerns were expressed in the agreement which has been reached between the belligerents pledging not to strike each other's nuclear installations.²⁰¹ However, political interest in survivability of nuclear installations and delivery systems is relatively low in South Asia. The whole issue of planning for a highly complex and very costly command and control measures, or whether and how to deploy and protect nuclear weapons to ensure retaliatory (second strike) capability is viewed somehow secondary. Instead, Indian and Pakistani statesmen adopted the position

²⁰¹ *Washington Post*, 2 January 1992.

that having a 'bomb in the basement' means they have established deterrence (Schulz 1993).

Unlike the case of the superpowers, evidence suggests that India and Pakistan have done very little in promoting the survivability of their nuclear capability. The variety of delivery systems is limited in nature, and so is the probable quantity of weapons. There is no evidence of hardened silos for nuclear missiles in the region, and only limited dispersion and spreading of delivery systems (Spector 1990).

There are many different methods of survivability which are expected to contribute to stable balance of terror stemming from great uncertainty (Feldman 1982). Although none of this methods were implemented in the region, uncertainty concerning all aspects of nuclear capability and deterrence in South Asia is relatively high, making all of the costly methods of survivability less relevant at the current stage of nuclearization. As stressed by Rosen (1977), the high possibility of even a few warheads to survive a first strike, and then to retaliate, sow fear and encourage caution among decision makers.

C. Risks and Dangers of Nuclearization

The process of nuclearization in the region of South Asia, and the inability of India and Pakistan to reach a stable nuclear deterrence posture, is liable to introduce some risks and dangers both to the region and to the global system.

As in the case of the Middle East, these risks and dangers are summarized under four categories: rationality of decision makers, instability of regimes, deficient technology and nuclear learning.

1. *Rationality of leaders* - The rationality argument refers to the leaders' readiness to take unnecessary risks and use force; the military mind; and the dominance of hate, hostility and clashing ideologies and religions. All these considerations are liable to lead to misperceptions and miscalculations. The Indo-Pakistani relationship is indeed of high emotional intensity, where ideology and religion generate hatred and fear. Therefore, under conditions of acute crisis between India and Pakistan, leaders of both sides are liable to launch preemptive attacks in crisis.

However, in spite of the frequent resort to force in the Indo-Pakistani relationship, it seems that leaders of both sides have remained responsible during crises, and acted out of careful calculations. "All Indo-Pakistani wars have been essentially 'gentlemanly'. Civilian targets, or even targets where civilian casualties could occur, were never attacked; prisoners of war were treated humanely and returned after the cessation of hostilities" (Thomas 1993, 67). It seems that the term 'sensitivity to costs', as in the Middle Eastern case, describe leaders' behavior in the nuclear age better than rationality. And leaders of both states seem to be aware of the hazardous consequence of nuclear exchange.

Another aspect of rationality is the military mind--the

norm of solving conflicts by the use of force (Tucker 1961). Unlike in the superpowers' context, India and Pakistan frequently resorted to violence, including three major wars. Since military clashes and violence are so common in South Asia, the possession of nuclear arms in the hand of military minded leaders is liable to lead to the use of nuclear weapons (Dunn 1991).

This argument could be countered by pointing out the caution not to be dragged into war over Kashmir in 1990, most probably thanks to the implied nuclear deterrence, and the fact that no wars between the rivals have occurred since 1971 (Thomas 1993).

In addition to the 'military mind' argument, there is a concern about military control over nuclear facilities. In Pakistan, the Army was the dominant force in politics, especially over issues of foreign and defense policies. Thus, political leaders seek the army's support in order to govern effectively. This case is more severe in Pakistan. Prime Minister Benazir Bhutto's tense relations with the army were clearly reflected in the testing of Pakistan's newly designed missiles. Spector (1990) mentioned that the fact that Pakistan's army chief of staff General Mirza Aslam Beg, rather than Ms. Bhutto, announced the testing of the Hatf I and II seems to have been an attempt by General Beg to enhance the Army's prestige. Likewise, leaders are limited by the chief bureaucrats of nuclear projects.

Given the widespread popularity of the

Pakistani nuclear weapons effort, the country's senior nuclear aides could easily turn public opinion against Ms. Bhutto if she sought to constrain the program against their wishes. These factors appeared to give the Army and the country's nuclear establishment an effective veto against Ms. Bhutto's policy-making in the nuclear sphere (Spector 1990, 103).

2. *Internal political instability of states* - The internal instability argument alludes more to Pakistan than to India. In addition to the limiting and disrupting effect of the Army, Ms. Benazir Bhutto's authority was confined further by her weak political position. Ispahani argued that the strong and quite popular opposition in the Pakistani parliament was able to interfere in issues concerning security and nuclear affairs as well as domestic matters.

Persistent praetorianism has left its mark: the imbalance of power between civilians and the army has resulted in the uncomfortable acknowledgement by all civilian regimes that their political actions risk army displeasure and coups. . . . All civilian regimes are *de facto* power-sharing regimes, dependent on the co-operation of soldiers and bureaucrats (Ispahani 1989, 10).

The political transformation in Pakistan, from military rule to a democratic regime, bared the danger of control over nuclear weapons. As a democratically elected Prime Minister, Bhutto's authority over sensitive foreign policy and defense issues was considerably constrained. Spector (1990) argued that despite her status as the head of the Pakistani government, there were serious doubts as to whether she had acquired political control over the country's nuclear program, inasmuch as her authority over the Pakistani Army and the country's powerful nuclear bureaucracy, which jointly run the program, was uncertain.

3. *Lack of nuclear experience* - The lack of nuclear socialization is referred to as another danger of nuclear proliferation in South Asia. The belligerents did not have enough time and experience to apprehend the nature of nuclear deterrent relationships when introduced into a troubling dispute. Under conditions of crisis such as in Kashmir, any minor border clash is liable quickly to escalate to a nuclear war (Thomas 1993).

An opposing argument may be advanced to show that the regional leaders understand the essence of nuclear deterrence. Because of the involved uncertainty and implied unbearable costs they would act with much caution. This is the "essential universality of nuclear deterrence logic" (Mageed 1990, 1094).

The responsibility of the two sides in their nuclear

relations was also demonstrated in a formal treaty signed by India and Pakistan in 1991 not to attack each other's nuclear energy installations in case of war.

The often predicted fourth Indo-Pakistani war has not yet taken place over Kashmir, perhaps because India and Pakistan are on the brink of a nuclear weapons capability, or may already possess such capability, thus deterring both sides from taking any conventional military risks as well (Thomas 1993, 69).

4. *Deficient nuclear infrastructure* - The argument of deficient technology refers to India and Pakistan's lack of proper safeguards, unstable second strike capability and insufficient C'I facilities. Such a deficient nuclear structure is liable to lead to accidents, unauthorized use and terrorism, consequences which might lead to the outbreak of unintentional nuclear exchange (Dunn 1982). Burns (in Cohen 1991) reported that the security measures around nuclear facilities in India (with the exception of the BARC nuclear complexes) are generally lax. In regard to the Pakistani unstable second strike capability, Naim (in Cohen 1991) argued that if Pakistan were to acquire nuclear weapons but not the necessary technology to make them invulnerable to an Indian first strike, the incentive to launch a preemptive strike during a crisis or adopt a launch-on-warning strategy would be great.

To sum up, it seems that the above risks and dangers do not hold for this region more than for the nuclear powers, as demonstrated earlier in the case of the Middle East. South Asian decision makers seem to be aware of the unbearable costs involved in nuclear capability. Hence, they are already taking them into consideration in their political behavior.

III. Political Implications

A. Decisions of Nuclearization

An important element of nuclearization is the political need for a nuclear program. In this region--where Indo-Pakistani relations have been antagonistic and distrustful, and political and economic interactions between the neighbors has been restricted (Ispahani 1989)--a resort to the 'perceived' ultimate utility of nuclear weapons seems to be obvious.

India: The Indian nuclear program was launched in 1964, shortly after the military defeat to China in 1962, and the Chinese nuclear test of 1964 (Spector 1984). The Indian Prime Minister Lal Bahadur Shastri initiated the program, justifying it as a tool for peaceful purposes and opposing nuclear weapons in general (Mirchandani 1968). The program for peaceful nuclear explosives was developed by Prime Minister Indira Gandhi in 1969, following India's refusal to sign the NPT (1968) and China's thermonuclear bomb test. The official Indian reasoning behind the nuclear program was expressed by India's representative to the U.N., Rikhi Jaipal: "The Indian nuclear program is designed mainly for the generation of electricity and also for the use of agriculture, irrigation. . . . This program is considered essential for the future of economic development" (Jaipal 1977, 45).

While the Indian victory over Pakistan in 1971 downplayed its security needs for nuclear weapons, aspiration for global

recognition and prestige had motivated Indira Gandhi to approve the 1974 nuclear test. The decision on the nuclear test was stimulated, or at least reinforced, by two events (Potter 1988). The first trigger was the rapprochement between the U.S. and China, interpreted by many Indians as an American effort to contain both Indian and Soviet influence in the region. The second event was the American support of Pakistan during the 1971 war and its attempt at coercive diplomacy when deploying American carrier Enterprise in the Bay of Bengal. Kapur (in Potter 1988) mentioned another incentive for the nuclear test, the need to signal China about India's nuclear intentions, unless China was more accommodating in Indo-Chinese and sub-continental relations.

India's first and only nuclear test was referred to as a peaceful nuclear explosion. Nevertheless, the growing Pakistani nuclear aspirations brought India to reevaluate its no-nuclear-weapons policy. Prime Minister Charan Singh declared in 1979: "We do not want to join the race to make a bomb, but if Pakistan sticks to its plans to assemble a bomb, we will perhaps have to reconsider the whole question."²⁰² Later, Prime Minister Gandhi declared her intention to assemble nuclear explosives if necessary.²⁰³ In 1984, the nuclear tensions with Pakistan grew, as a result of new revelations of Pakistani nuclear smuggling and of reports that

²⁰² *NY Times*, 16 August 1979.

²⁰³ *Washington Post*, 14 March 1980.

China had given it a nuclear-weapon-design information.²⁰⁴

Pakistan: In the wake of Pakistan's 1971 defeat by India and the dismemberment of the state, Prime Minister Zulfikar Ali Bhutto launched the Pakistani nuclear weapons program. In search for the 'Islamic bomb', Bhutto gained Arab financial assistance, at the beginning from Libya and later on from Saudi Arabia (Krosney 1981). The Pakistani decision to initiate a nuclear program stemmed from Indian threats to Pakistan's existence, fears of Indian domination, and a desire for prominence in the Islamic world. Nuclear capability was believed to grant proper answers to India's conventional military superiority and substantial nuclear potential, as well as to counter more subtle forms of Indian dominance in regional affairs. Yet, Pakistani nuclear aspirations emerged before the Indian nuclear test. Bhutto said in 1967:

Our plans for [a total war] should include the nuclear deterrent. It is vital for Pakistan to give the greatest possible attention to nuclear science and technology. India appears determined to proceed with her plans to detonate a nuclear bomb. It is of the utmost importance for Pakistan's science and technology to produce such a weapon in time before the crisis begins (Bhutto 1967, 72).

²⁰⁴ *Washington Post*, 17 July 1984; *NY Times*, 23 June 1984.

Bhutto's later reaction to the Indian nuclear test was: "The Pakistani people are ready to eat leaves and grass, and even go hungry to get the bomb" (quoted in Subramanyan 1989, 52). The main rationale behind Pakistan's interest in a nuclear weapons option was security, especially to counter the perceived nuclear threat from India. This view was summarized by Ispahani:

Since 1947, Pakistan and India have been unable to agree on the terms of amicable co-existence. India is the dominant factor in Pakistan's foreign policy and intrudes into its domestic politics. Historically, Pakistanis, especially the soldiers, have been skeptical about India's acceptance of the Muslim nation with independent interests and have resented India's political bullying, economic threats and armed intervention in the affairs of all its South Asian neighbors. . . . [Pakistan's size and location] make India the preponderant military danger. Pakistan has responded to this threat by emphasizing conventional defence modernization and a nuclear weapons' research programme (1989, 30).

In the eyes of its leaders, Pakistan's location made it strategically vulnerable. They have perceived it as a small state under siege, surrounded by powerful neighbors: by three great land powers, China, the U.S.S.R., and India.

Consideration of the international environment was central to its nuclear policy, and changes in relations among the superpowers and in their involvement in the region, affected the decision to go nuclear. General Zia ul-Haq stressed in 1978: "China, India, the Soviet Union and Israel, all have atomic weapons. No Muslim country has such a weapon. If Pakistan has atomic weapons, it would strengthen the Muslim world" (Cited in Krosney 1982, 149). Pakistan might also regard nuclear weapons as useful for tactical defense should nuclear deterrence fail; as a political bargaining chip in negotiating mutual restraints with India; and as a deterrent for Indian nuclear blackmail (Potter 1988).

B. Balance of Vulnerability Between the Actors

The special composition of population in South Asia makes nuclear regional actors vulnerable to nuclear attack. The concentration of Muslims in Indian cities, and the kinship ties of Pakistani and Indian Muslims, increase vulnerability (Kapur 1978). A significant portion of the population of India and Pakistan, and most of their elite, is concentrated in a few cities. This fact expands vulnerability on the one hand, and puts constraint on the use of nuclear weapons, on the other. As demonstrated in the table below, matters are more complicated in India, where the percentage of Muslim population in cities likely to be targeted in a Pakistani counter-city strike is relatively high. The concentration of Muslim population in Indian cities would restrain Pakistan from attacking these cities, "In all but the most severe of crises, e. g., where the very existence of Pakistan was at stake" (Naim, in Cohen 1991, 42). In Pakistan, the majority of the population is concentrated in a small number of towns. This fact contributes to a fairly balanced level of vulnerability of civilian population in both countries.

India and Pakistan pay close attention to their geographical proximity and uncertain meteorological factors. These elements enhance the given vulnerability of their population and suggest carefulness in foreign policy, especially in war planning. "In case of a nuclear attack by either India or Pakistan on the other, an unfavorable wind direction and velocity could carry the radioactive fallout to

the attacker's own territory" (Chellaney 1991, 69). Thus, any nuclear attack on targets in the 'heartland' of Pakistan, the Indus Valley region of Pakistani Punjab, would mean a great number of casualties from fallout in Indian Punjab, and vice versa. Wind and rain also affect targeting calculations. During the period of Northeast Monsoon (December--March), fallout would be carried back to India, while during the period of Southwest Monsoon (June--September), it would returned back to Pakistan (Bartholomew 1968). Nevertheless, damage to the border regions of both states would be substantial (Naim, in Cohen 1991).

MAJOR CITIES LIKELY TO BE TARGETED IN A COUNTER-CITY NUCLEAR ATTACK

India

City	Population	Muslims	Muslims(%)
Bombay	11,914,900	1,682,400	14.12
Delhi	9,118,600	674,800	7.40
Ahmedabad	3,164,100	461,300	14.58
Agra	1,041,800	170,200	16.34
Jaipur	904,600	169,300	18.71
Surat	693,500	166,500	24.00
Meerut	528,400	206,100	39.00

Pakistan

City	Population
Karachi	8,337,100
Lahore	4,599,900
Rawalpindi	1,427,100
Hyderabad	1,088,000

Source: Cohen 1991, 45-49.

In summary, The aforementioned factors serve as restraints on the use of nuclear weapons by India and Pakistan, but their marginal utility for stability is low. The great vulnerability of the two actors raises the costs of any use of nuclear weapons and contribute to the stability of the regional balance of terror. The ability of India and Pakistan to inflict unacceptable damage on the other serves as a strong deterrent element (Naim, in Cohen 1991).

A significant factor which decreases stability is the imbalance of vulnerability between India and Pakistan. Pakistan seems to be more vulnerable than India for several reasons. First, there is an enormous difference in the size of the two countries, for India is about four times bigger than Pakistan. Therefore, Pakistan would need many more nuclear warheads in order to threaten the existence of India as a state. Second, the delivery capability of Pakistan is much more limited than India's, thus, it is not capable of covering the whole Indian territory. This fact limits the scope of Indian vulnerability. Third, in addition to the acquisition of nuclear capability, Pakistan bases its strategic parity with India on close ties with allied nuclear powers, the United States and China. These fragile alliances mean parity with India cannot be taken for granted, and could turn to nonparity under some political circumstances.

C. Deterrence and Its Effect

An immediate consequence of the process of nuclearization is the adoption of a deterrence posture. Decision makers are facing several options, such as maintaining a nuclear option or bomb in the basement; a covert operation with implied nuclear threats; or an overt deterrence posture with an official declaration of the possession of the bomb and adoption of a recognized strategy of deterrence. Additionally, it is essential for statesmen, at any stage of nuclearization, to recognize clearly incoming nuclear threats and perceive them as credible (Schelling 1980); to establish clear red lines for deterrence; and to engage in nuclear socialization and learning (Nye 1987). The clarity of nuclear messages and knowledge about relative capabilities of the involved actors improve the prospects peace in the region (Waltz 1981).

In South Asia, both India and Pakistan chose to adopt a 'strategy of ambiguity' with regard to their nuclear capability, following the Israeli example. Having the benefit of nuclear capability (option or in the basement), they preferred to equivocate about its real capability. One Indian minister said, prior to the nuclear test: "It's no use becoming a puny member of the nuclear club; that won't impress anyone. We must acquire the capability and then we will have ample time to decide what to do with it" (Quoted in Kemp 1974, 118). Similarly, Pakistani official Zahid Mahmood was quoted: "The French plutonium plant by itself will serve as a

deterrent to India."²⁰⁵ Hence, Indo-Pakistani nuclear relations may be described as 'deterrence by uncertainty' (Kissinger 1961), following the Israeli Example. Such a posture deters by inflicting doubts in regard to readiness to execute nuclear threats and the capability to do so.

1. *The May 1990 nuclear crisis*

The turmoil in Kashmir, intensified in 1989, stood in the background of the May 1990 crisis between India and Pakistan. India accused Pakistan of inflaming the Muslim revolt and aiding the rebels by military training and armory, while Pakistan charged India in suppressing Kashmiri self-determination.²⁰⁶

The growing Kashmiri aspirations of separatism brought about an aggressive Indian police response, and hundreds of Kashmiris were killed in rioting and clashes with the police. India advanced some military units to the region, fifty miles from the Pakistani border, where they were capable of cutting off southern Pakistan from the north--the Pakistani nightmare. This maneuver was reciprocated by similar Pakistani movements out of fear that India might take advantage of the situation and attack Pakistan. Pakistani leaders could not accept another military defeat by India.

The 1990 crisis did not differ much from other local and relatively modest crises in South Asia, and the probability of

²⁰⁵ *NY Times*, 8 March 1976.

²⁰⁶ *New York Times*, 22 April 1990.

escalating to war was minor (Naqvi 1993). This was so thanks to the validity of deterrence, both conventional and nuclear, between India and Pakistan (Chellaney 1991; Ganguly 1990). Yet, Hersh (1993) analyzed the situation as a severe nuclear crisis, on the verge of nuclear exchange. Hersh argued that the nuclear crisis was so acute that the "Bush administration became convinced that the world was on the edge of a nuclear exchange between Pakistan and India." Richard Kerr, then deputy director of the C.I.A. said: "It was the most dangerous nuclear situation we have ever faced since I've been in the U.S. government. It may be as close as we've come to a nuclear exchange. It was far more frightening than the Cuban missile crisis." Robert Gates, then deputy National Security adviser to the President worried about the possible process of escalation: "Pakistan and India seemed to be caught in a cycle that they couldn't break out of. I was convinced that if a war started, it would be nuclear" (Cited in Hersh 1993, 56-57).

Hersh indicated "a hundred per cent reliable intelligence" source which reported that Pakistani General Beg had authorized the assembly of nuclear weapons, a warning to India to refrain from attacking Pakistan. The intelligence source also included anonymous assertions that Pakistan loaded nuclear weapons aboard its F-16s at the height of the crisis.

Nevertheless, the nuclear danger was not quite definite. Former Ambassador Richard Oakley argued: "We never had any *hard* indications that any nuclear warheads had been delivered

to an air base. You couldn't guess that. . . . We had no evidence that a nuclear exchange was imminent" (Cited in Hersh 1993, 65). Other U.S. officials who were involved in the crisis said they had been primarily concerned that the two countries escalate to conventional war. Because the two actors are capable of assembling nuclear weapons, the official stated, they also had to regard the situation as a nuclear crisis.²⁰⁷ Richard Haas, a NSC official who participated in Gates' negotiation group, stressed that the main concern was that of being on the brink of conventional war, not a nuclear war.²⁰⁸

The incoming information on the nuclear crisis made the U.S. intervene, in service of the supreme interest, and prevent the situation from escalating further. President Bush appointed Gates to fly on his behalf to South Asia and assist in managing the crisis. The U.S. did not attempt to deal with the basic tensions and roots of the dispute over Kashmir. Gates told the leaders of India and Pakistan: "I'm not here to solve the Kashmir problem or discuss regional arms control. I'm here because we think there is a short-term problem that we want to defuse" Cited in Hersh 1993, 67). As in the nuclear crisis of 1973, the U.S. attempted to manage the crisis by satisfying basic needs--providing arms to Pakistan.

The 1990 nuclear crisis came to an end when the belligerents called their forces away from the border, and

²⁰⁷ *New York Times*, 23 March 1993.

²⁰⁸ *Ibid.*

sent their foreign ministers to discuss some confidence building measures. The nuclear crisis, brought about by nuclearization in a long-lived conflict, encouraged the parties to accommodate. The embedded existential logic of deterrence and nuclear consciousness of the leaders, a factor that was neglected by Hersh (1993), contributed to avoiding not only the use of force but even the employment of explicit nuclear threats. Both actors were aware of the nuclear potential of the other side, and, as Ganguly argued in regard with the Pakistanis, they understood that "regardless of the outcomes, a war could spell the end of Pakistan" (Ganguly 1990, 68).

2. Nuclear deterrence in South Asia

Leaders of both actors have delivered 'hidden' deterring nuclear threats toward each other. Prime Minister Charan Singh stated in 1990 that India should be "psychologically prepared" for an armed conflict with Pakistan over Kashmir and warned that Pakistan would "pay a very huge price" for fomenting unrest in the region.²⁰⁹ Indian statesmen warned Pakistan that its very survival might be at stake, declaring that if war occurs, "Pakistan will cease to exist."²¹⁰ Pakistan's chief of staff General Mirza Aslam Beg stressed: "Both the nuclear option and the missiles act as deterrents and these in turn contribute to the total fighting ability of

²⁰⁹ *Wall Street Journal*, 11 April 1990.

²¹⁰ *NY Times*, 16 April 1990.

the Army, which then [further] acts as a deterrent to the enemy" (Quoted in Chellaney 1991, 62).

India's nuclear capability surpasses that of Pakistan as of 1994, owing to its greater accumulated weapons-grade material. Yet, a crude form of nuclear deterrence has evolved between the belligerents. In 1988, Pakistani President Zia ul-Hak declared:

With respect to their nuclear capabilities, if they create ambiguity, that ambiguity is the essence of deterrence. The present programs of India and Pakistan have a lot of ambiguities, and therefore in the eyes of each other, they have reached a particular level, and that level is good enough to create the impression of deterrence (Spector 1990, 100).

Later on that year, President Zia ul-Hak referred again to the issue of mutual deterrence, and stressed that the region had achieved "a stable nuclear deterrent relationship based upon ambiguity as to whether India or Pakistan had nuclear weapons, and if they did, how many they possessed" (Spector 1990, 100). Ganguly argued: "India's superior weaponry, manpower, and incipient nuclear capabilities simply deter any reasonable Pakistani interest in starting a war with India" (1986, 148).

Since China was, and still is, an important factor in the formation of nuclear ambitions and nuclear posture in South

Asia, Thomas (1993), after assessing the state of regional nuclear posture, suggested a similarity between this region and the global system. This is despite the crude form of deterrence and the absence of major components, such as an established second strike capability and C'I systems.

In principle, if the strategic nuclear relationship among the United States, the former Soviet Union and China could be maintained on a stable basis during the Cold War, then it might be possible to maintain a similarly stable relationship among China, India and Pakistan today. China would occupy the same position as the United States in the global Cold War strategic triangle, India that of the former Soviet Union and Pakistan that of China. A situation of 'mutual assured destruction' would exist between China and India similar to that which existed between the United States and the former Soviet Union; and one of strategic nuclear superiority between India and Pakistan similar to that between the former Soviet Union and China. Any imbalance in the India-Pakistan relationship would be offset by the intrusion of China on the Pakistani side (Thomas 1993, 67).

Indications suggest that a crude form of nuclear deterrence has evolved in South Asia. However, the references

of regional leaders to the nuclear issue are quite minor. The ambiguous nuclear deterrence seems to succeed in elevating the belligerents' awareness to the enormous costs involved, as well as their high vulnerability. Thus, the foreign policies of both India and Pakistan and the use of force in their bilateral relations are more controlled and careful, with respect paid by each state to the other's vital political interests.

Being in its primal stages, nuclear consciousness starts to crystalize in the region. Yet, only a few references of leaders may demonstrate a maturity of such a consciousness. In the wake of suspicions about the improving Pakistani nuclear capabilities in 1984, Prime Minister Gandhi has recognized the change it brings, and declared the Pakistani nuclear program was "a qualitatively new phenomenon in our security environment. . . [one which adds] a new dimension to India's defense planning."²¹¹

As stressed by director of Indian Center for Strategic Studies, Akhtar Mageed, "There is an essential universality of nuclear deterrence logic, and it would work for India and Pakistan also" (1990, 1094). Mageed argued that because of an uncertainty about India and Pakistan possessing nuclear weapons--or the number they may have--both have achieved some deterrent stability.

²¹¹ *NY Times*, 21 October 1984.

IV. Survival Through Accommodation

The rivalry between India and Pakistan is rooted in the political structure of these two countries. The conflict over Kashmir, over which they fought three major wars, seems to be symbolic of the deeply embedded hostility, but by no means the entire cause of the regional rivalry. Both states strive to develop nuclear capability for their own national security, a capability which is believed to contribute to enhanced stability and the moderation of the conflict (Subrahmanyam 1986 and 1989).

In South Asia, the belligerents are urged by the U.S. to expand confidence-building measures, such as the agreement not to attack each other's nuclear installations, and refraining from further nuclear testing and from declarations that they possess the bomb.

Attempts to reach a political settlement started as early as 1949, when India offered Pakistan a 'no-war pact' but was refused (Bhutto 1964). For the two following decades all of these attempts failed, since the real issues at stake were not dealt with. The first sign of moderation of both sides appeared in 1972, when Indira Gandhi and Zulfikar Ali Bhutto met at Simla. Yet, the Pakistani moderation might be understood in light of its two decisive defeats in 1965 and 1971. The meeting concluded by signing an accord that had "far-reaching implications for the future of the Kashmir dispute. The second paragraph of the agreement stated that 'the two countries are resolved to settle their differences by

peaceful means through bilateral negotiations or by any other peaceful means mutually agreed upon between them'" (Ganguly 1990, 62). In light of the previous Pakistani military defeats, it was quite clear why this agreement failed to hold, and between 1974 and 1977 a number of military clashes occurred. India and Pakistan once again got involved in a conventional and nuclear arms race, while trying to enhance security through alliances.

Tolerance and readiness for accommodation and some cooperation had reached their peaks at the end of 1985, when leaders of both sides met in New Delhi and agreed upon a step-by-step process for normalizing relations. Spector (1990) mentioned that these measures included new discussions to end border clashes over the disputed Siachen Glacier region in Kashmir, the expansion of trade links, and the resumption of talks on draft peace treaties. In order to ease nuclear tensions, both leaders agreed to refrain from attacking each other's nuclear facilities. Later, the two leaders negotiated a rising border tension and reached an agreement on mutual troop withdrawals.²¹²

From the time Benazir Bhutto took office, India and Pakistan's relations improved remarkably. On July 1988, Indian Prime Minister Rajiv Gandhi made a state visit to Islamabad, the first visit by an Indian leader in several decades. On 31 December 1988, the two countries signed a written codification of the 1985 oral understanding between

²¹² *NY Times*, 6 March 1987.

Zia and Gandhi, under which both countries agreed not to attack each other's nuclear installations. This initiative was continued in 1992, when leaders of the two countries exchanged lists of nuclear facilities under the agreement not to strike each other's nuclear sites.²¹⁴ This agreement is a strong evidence to nuclear consciousness of both sides. It shows that leaders of India and Pakistan recognized the existential logic of deterrence, and the need to accommodate and cooperate for risk and tension reduction. Arms control measures such as this agreement are likely to promote the settlement of disputes between the opponents.

Overall, Chellaney (1991) mentioned three reasons for the modest and manageable risks of subcontinental nuclear war in South Asia. First, the region has a record of conducting wars in a responsible manner. Thus, tacit cooperation during wars restricted air strikes mainly to military targets, avoiding large-scale civilian and industrial destruction. Second, since 1972 the rivals have maintained a cooperative bargaining and a continued dialogue which have built an element of stability into the politics of the region. The Indo-Pakistan agreement to refrain from attacking each other's nuclear sites, which was signed in 1988 and ratified in 1991, is an example of this successful bargaining. Third, high vulnerability associated with geographical proximity constrains the use of nuclear arms in South Asia.

Although relations between the two countries are still

²¹⁴ *Washington Post*, 2 January 1992.

characterized by mistrust, apprehension, hostile statements and violent border incidents, the bilateral relationship between India and Pakistan has improved thanks to efficient arms control and confidence building measures.²¹⁴ This tendency is demonstrated by the statement of Ambassador Kanwal Sibal, deputy chief of mission at the Indian Embassy in Washington:

[In the recent years] Six rounds of foreign secretary-level talks have been held. Two proposals--an Agreement on Advance Notice on Military Exercise, Maneuvers and Troop Movements and an Agreement on Prevention of Air Space Violation and Permitting Overflights and Landings by Military Aircraft--have been ratified and are in force. The directors general of military operations of both countries maintain direct weekly contact by telephone. Pakistan's army chief of staff has been invited to visit India (Sibal 1993, 10).

Nevertheless, one should not overestimate the contribution of such CBMs to the Indo-Pakistani relations. One example for the insufficiency of CBMs is the hotline between the two states. The existence of a crisis hotline between the heads of military of India and Pakistan did little

²¹⁴ CBMs and arms control measures are discussed thereafter.

good during the 1987 crisis. In this event the two armies concentrated more than 200,000 troops along the border, and the danger of escalation was acute.²¹⁵ Yet, "No one even tried to talk on the hotline with the other."²¹⁶ Pakistani President Zia ul-Haq remarked after the crisis ended: "Neither India nor Pakistan wanted to go to war but we could have easily gone into war."²¹⁷

India and Pakistan are both aware of the dangers involved in any future armed conflict between them. Both sides, at least tacitly, recognized the need for 'damage limitation' in conventional conflict (Burns, in Cohen 1991), as well as in nuclear exchange. There were some arms control initiatives in the region. Pakistan's Prime Minister Benazir Bhutto expressed in 1989 the readiness "to accept any safeguard, inspection and verification that are applied on a non-discriminatory regional basis."²¹⁸ Pakistan's Prime Minister Nawaz Sharif proposed in 1991 that the US, USSR, and China mediate talks between his country and India on controlling nuclear weapons in South Asia.²¹⁹ India, however, rejected Pakistani proposals and suggested a worldwide nuclear ban.²²⁰ Later on, Indian Foreign

²¹⁵ Matt Miller, "Tensions Escalates Between Old Enemies", *Wall Street Journal*, 4 March 1987.

²¹⁶ *NY Times*, 24 January 1987.

²¹⁷ Quoted in Miller, *ibid*.

²¹⁸ *Far Eastern Economic Review* (Hong Kong), 22 June 1989.

²¹⁹ *NY Times*, 7 June 1991.

²²⁰ *Washington Post*, 8 June 1991.

Secretary J. N. Dixit said that his government had offered to discuss with the US the possibility of halting the spread of nuclear weapons in Asia. He said: "We are serious about nonproliferation, and we have indicated to the Government of the United States that in the context of our evolving trust in each other, we would like to discuss these matters bilaterally and see if something can be achieved."²¹

The actors' hesitation to discuss arms control issues stems from different perspectives on the issue. While Pakistan perceives its nuclear affairs in a regional context, India views the issue as a discriminatory global problem and thus, strives for a global arrangement (Burns, in Cohen 1991).

Nonetheless, there are some striking actualities which suggest accommodation and moderation in the Indo-Pakistani relationship, especially after nuclearization ensues in the early 1970s. First, since 1971 no war has been fought between the two bitter enemies. Second, the belligerents have reached some agreements which might help them in regulating their relations, such as the no-attack pact and the continuing dialogue in high levels. Third, both sides are developing nuclear consciousness, and realize the use of nuclear weapons for deterrence only. But the road to arms control agreement and enhanced stability in South Asia is still ahead.

As observed in previous cases, India and Pakistan need to proceed with their arms control negotiations in order to stabilize their relations. Thereafter, they are likely to

²¹ *NY Times*, 11 March 1992.

elevate the negotiations to the discussion of the fundamental tensions between them, and to the search of political settlements.

CHAPTER 6

CONCLUSIONS

The best the scholar can do, then, is to trace the different tendencies that, as potentialities, are inherent in a certain international system. He can point out the different conditions that make it more likely for one tendency to prevail than for another, and, finally, assess the probabilities for the different conditions and tendencies to prevail in actuality (Morgenthau 1973, 21).

This study analyzed the impact of nuclearization in conflictive regions on the political behavior of states. The research strived to examine whether the acquisition of nuclear capability has encouraged security dilemmas, arms races, and thus an hazardous nuclear exchange, or has contributed to accommodation and cooperation among belligerents.

The hypothesis stated that secondary nuclear powers who acquire nuclear capabilities, and develop strategies of deterrence, are likely to reach a sufficient level of regional stability. The evolving regional balance of nuclear terror would raise nuclear consciousness among leaders and induce cooperation among SNPs, restrain conflicts, and moderate tensions. This prompted cooperation was conceived as essential for the reduction of the risks and dangers, those

which are involved in the process of nuclearization in conflictive regions.

Morgenthau stated the inherent difficulty of an analysis of this kind. "The most formidable difficulty facing a theoretical inquiry into the nature and ways of international politics is the ambiguity of the material with which the observer had to deal. The events he must try to understand are, on the one hand, unique occurrences. . . . On the other hand, they are similar, for they are manifestations of social forces. . . . But where is the line to be drawn between the similar and the unique?" (Morgenthau 1973, 18). This study maintained similar dilemmas concerning the examination and comparison of three different events, in three disparate circumstances, and on three distinct locations. Therefore, the contribution of this study may be found in tracing tendencies of nuclearization and assessing the probabilities of these tendencies to prevail, as suggested above by Morgenthau.

Three cases of nuclear dyads were studied. All three cases share two prominent characteristics: a severe conflict and a strong nuclear dimension. First, the case of the superpowers, the United States and the Soviet Union, was examined as the historical model for a desired nuclear behavior. The Middle East, the second case, was chosen for a thorough analysis both for its extensive nuclearization and for being widely mentioned as the most dangerous region for

world peace. Similarly, the third case of South Asia was studied as a conflictive region with two nuclear adversaries.

The point of departure of this study was dissimilar to the main stream of the literature on nuclear proliferation. Many scholars perceive nuclear proliferation as an obstacle and threat to regional and global stability and peace. This study concentrated on the political outcomes of nuclear proliferation and its effects on regional conflicts. It assumed that the process is inevitable and already in motion wherever it is politically necessary, and is not controlled and cannot be stopped by any external power or international agent. Thus, it was not necessary to ask if nuclearization is desirable and possible. Instead, the most imperative questions are: how does it develop, and what are its consequences? As such, this examination followed those scholars that contradicted the anti-proliferation stream, i.e., Feldman (1982), Gallois (1966), Rosen (1977), and Waltz (1981).

Analytical Framework

The main contribution of this analysis is the revelation of trends of nuclear development similar to those of the superpowers. The major emphasis rests upon the existential logic of nuclear deterrence, which promotes the supreme interest of all mankind in the avoidance of nuclear war and enhance nuclear consciousness among decision makers. As a

result, there is a high probability that nuclearization would lead to accommodation, cooperation and nuclear peace. This tendency emerges from the 'no way out' situation of nuclear development.

Another contribution of this study is the comprehension of regional deterrence as stemming from nuclear consciousness, and not as emerging from a quantitative or qualitative arms race. The diffusion of the existential characteristic of nuclear weapons throughout the globe, and its promotion of the formation of a supreme interest and nuclear consciousness, encourage leaders to accommodate and cooperate in order to avoid the annihilation of their country. This is cooperation between self-help actors who keep nuclear peace not because of moral justifications but as a result of egoistic interests of survival.

The third contribution of this study rests upon the recognition of SNPs as being able, and likely, to reach a state of stable nuclear deterrence and balance of terror, regardless of the quantitative or qualitative balance of nuclear power between them. Nuclear consciousness may coexist with long-lived tensions and disputes. Furthermore, this consciousness is strengthened by severe crises, as reflected from the Test Ban Treaty which followed the Cuban Missile Crisis, 1962. The regional cases suggest a similar tendency, as in the Egyptian-Israeli peace negotiations which emerged from the 1973 war that included a nuclear dimension.

The analysis of regional nuclear proliferation in

comparison to the case of the superpowers required a respecification of relevant concepts. Therefore, some of the following notions, primarily drawn from the experience of the superpowers, were modified for the regional framework.

The basic unit of analysis, the SNP, is an actor which is involved in a severe regional conflict, and is believed to develop nuclear capability. This actor has no intention to join the traditional 'nuclear club' by deliberately conducting a nuclear test and declaring his weapons. This is the new manner of nuclear proliferation, the silent spread of nuclear arms into Third World countries. While nuclear materials and know-how become available to all, nuclearization seems to be unavoidable.

Since all nuclearizing countries preferred, at this time, not to declare their real capabilities, and chose nuclear deterrence by ambiguity, a respecification of the notion of nuclear power was appropriate. The definition of a SNP is concerned with the nuclear potential of states. The question of their actual nuclear capability, whether they have a nuclear option or bomb in the basement, is secondary. This is so, since once the technological capacity and political will to go nuclear are there, the element of time is marginal (Schelling 1976). Therefore, less attention was paid to capability differences among SNPs. When there is a political aspiration to obtain nuclear capability, it is only a matter of time between the recognition of this need and the possession of tangible capability. This time gap may be

compensated for by receiving external nuclear guaranties.

The introduction of nuclear arms to the international arena, and thereafter into conflictive regions, brought about three major doctrinal and conceptual changes which induced politics. First, the concept of military defense became irrelevant in the age of sophisticated delivery systems. The source of this irrelevance was the destructive nuclear weapons which required a complete success in defense against them. Second, civilian population centers became the main target for attack in the nuclear age. Third, the enormous power of destruction of nuclear arms, and the speed in which they can inflict a substantial overkill, leave no time to correct errors or exercise diplomacy. The inability to survive a nuclear war has changed the essence of politics. Leaders and armies should work together not to win wars but to prevent them (Brodie 1973). The antagonists are driven to cooperate with each other in order to avoid their own destruction.

In the nuclear age, deterrence stands at the core of relations among adversaries. This study perceives deterrence as stemming from an ambiguous nuclear potential, and in terms of realization of fear. Deterrence requires careful calculations of costs and benefits and accurate perceptions and images of the enemy, on the one hand, and fear of the consequences in case deterrence fails, on the other. A nuclear deterrent threat is persuasive, thanks to the immense destructive power of nuclear arms, on the one hand, and to the great value of potential targets, on the other. Therefore,

the incredible vulnerability to nuclear attack of any state prevails upon its leaders to devote more thought to prevention of wars than to fighting wars (Baylis 1975).

These elements that enhance deterrence--vulnerability and power of devastation--emphasize the one supreme interest shared by all states, the interest of survival and defending the state's integrity by all means necessary for the task. However, in the nuclear age it does not mean going to war and risking life, but preventing military confrontations and exhausting all available means, including cooperation with the enemy.

Brodie (1973) argued that the mere presence of nuclear weapons prevented all kinds of wars between the superpowers. In the superpower relations, there was no direct use of force against each other's armies. The superpowers realized the great danger of escalation, thus, conducted their military affairs through proxies. The regional framework is different, since the conflicting belligerents share borders and the use of force is common. A limited use of force in regional crises is likely to continue, while being careful not to drag the opponent to a severe crisis which escalates to nuclear exchange. As demonstrated by the border clashes between India and Pakistan, the adversaries learned to avoid a broad use of force in their relations, despite frequent fights. Yet, the effect of the nuclear threshold on the regional level seems to be as strong and valid as on the global level.

The credibility of deterrence, hence, does not grow from

rational calculations solely. A major contributor to credibility is fear. It is the special combination of calculations and fear that assures the message is getting across. Once the nuclear threat is issued, the challenger is 'frozen' by great fear of punishment. Only thereafter does he consider the values at stake and calculate the capability and determination of both sides. This is true in an environment of well established nuclear deterrence, as between the superpowers, as well as between SNPs who carry nuclear options or 'bomb in the basement.' As a whole, leaders are not suicidal. Psychological motives, such as fear, contribute to their sensibility under nuclear deterrence.

This analysis suggests 'deterrence through uncertainty' (Feldman 1982; Kissinger 1961; Rosen 1977) as the main determinant of the success of nuclear deterrence among SNPs. Although SNPs are not capable of developing a reliable second strike capability at their current stage, the ambiguity concerning their nuclear capability contributes to uncertainty about the adversary's ability to launch a successful first strike. Thus, the slight chance of even one nuclear armed delivery system to survive a preemptive strike, and retaliate, is high enough to establish fear in the hearts of statesmen, and to make them 'more sensible' (Jervis 1989). Their fear enhances the balance of terror.

In the superpowers' context, it was the immense nuclear capability and mutual assured destruction (MAD) which created a balance of terror. In the regional frame of reference, the

balance of terror emerged as a result of the uncertainty about each other's ability to destroy the second strike capability of the opponent in a preemptive strike, together with the concentration of national assets and great vulnerability of these Third World countries. As Waltz stated, "*Uncertainty about the course that a nuclear war might follow, along with the certainty that destruction can be immense, strongly inhibits the first use of nuclear weapons*" (Waltz 1981, 12).²⁷²

The balance of terror frightens decision makers and encourages inaction and moderation over hostility. The probable outcome is an established nuclear stalemate, the nuclear peace. This peace is based on technology and on foreseen violence rather than good will and kindness. Both sides share the interest of avoiding nuclear holocaust, a terrorizing war which is liable to annihilate them both. In the nuclear age, they prefer co-existence over co-elimination. *This suggestion does not imply that nuclear war is impossible. Rather it stresses that nuclear war is unlikely and implausible.* And in times of crisis, when the interest at stake is short of survival, the belligerents would facilitate negotiations before they resort to force (Kahn 1965).

There are two prominent elements that assist leaders in developing their nuclear consciousness during the period of nuclearization. The first factor is the nuclear threshold, the psychological dividing line between the use and non-use of nuclear weapons. This threshold is influenced by the

²⁷² Italics in origin.

existential logic of nuclear deterrence. The second element is the 'crystal ball' (Carnesale 1983) which allows leaders to foresee the hazardous outcomes of nuclear exchange. These two elements strengthen the balance of terror, and at the same time, contribute to the formation of nuclear consciousness in the minds of leaders and to their readiness to accommodate.

In a situation of nuclear peace, when both sides are still holding their conflicting ideas but obliged to refrain from the use of force, the opponents tend to accommodate and cooperate in order to reduce tensions and risks of nuclear holocaust (George 1988). Their aim is to enhance their own security, not to conciliate the opponent. Since they have no intention to deal and solve the essential issues at dispute, the most probable outcome would be the adoption of arms control measures that help to avoid unpremeditated wars.

Risks and dangers of nuclear proliferation

The ability of regional nuclear powers to handle nuclear weapons responsibly and with care, while avoiding the risks and dangers of nuclearization, was widely questioned. Severe concerns were expressed in regard to the survivability of the global system. Yet, it seems that the accusations of regional leaders as irrational, who lack a sufficient nuclear learning, whose regimes are unstable and technology is insufficient, are exaggerated. Most of these accusations and dangers can be argued in the same manner regarding the five nuclear powers.

The Middle East was frequently charged as a region of

irrationality. Nevertheless, the regional actors seem to be no less rational than leaders of the powers, which their actions conceived as 'irrational' at times and rational later on (China).

Waltz (1981) mentioned Qaddafi of Libya as an 'irrational' leader who responded rationally and showed restraint when under severe threats. However, it is important to stress that the concept of rationality is not as adequate to describe leaders' behavior in the nuclear age. Rather, statesmen should be 'sensitive to costs' and refrain from actions which bear high costs, even thanks to their fear. The term 'sensitivity to costs' fits better situations of nuclear deterrence, since care and moderation are more significant in a nuclear environment than rationality.

As for the internal instability of regimes, this study indicates that many regimes in the studied regions, excluding these of Israel and India, were thought to be unstable. However, many of these regimes managed to survive enormous struggles. In the last two decades there was no single revolution or coup d'état among Middle Eastern central actors. And in South Asia, Pakistan had transferred to democracy, and at this time, the elected regime is widely legitimate. Additionally, the breakdown of the U.S.S.R. and the Eastern bloc suggested that nuclear arms are irrelevant in internal struggles.

The lack of nuclear learning was mentioned as another risk of proliferation. However, this argument ignores the

fact that nuclear arms were first introduced to the 'members of the nuclear club' which had no nuclear experience at all, not even of others. As for SNPs, their leaders have all the theoretical and practical experience that the nuclear powers accumulated as a guideline for a proper nuclear behavior. As well, SNPs are going through the process of nuclearization in a very slow manner. Since nuclear proliferation into Third World countries started during the 1960s, leaders of SNPs have had to date three decades of nuclear experience.

The deficient technology in the hands of SNPs is an additional source of criticism. The argument says that leaders of SNPs would resort to preemptive strikes, and tend to 'jump the gun' because of this deficit. Although this argument is the only factual argument, a period of twenty years has elapsed since Third World countries had reached nuclear capability.²²³ Notwithstanding the experience of SNPs, it is the mutual interest of SNPs and the nuclear powers that they will have technology available for safety and survivability.

The Superpowers

The case of the superpowers, the United State and the former Soviet Union, reveals two enemies who possess gigantic nuclear arsenals. As soon as the two obtained a mutual assured destruction capability, deterrence relations led to

²²³ India conducted its nuclear test in 1974, and Israel was believed to have nuclear weapons available during the 1973 War.

nuclear peace. Both sides modified their deterrent posture from time to time, yet in essence, it did not change over the years. MAD exhausted the different nuclear strategies, and contributed to a mutual perception of threat and horrifying future. The superpowers were captured in a strategic deadlock thanks to the balance of terror between them. Thus, leaders of the opponents abandoned strategies of war fighting, such as massive retaliation and limited war, and adopted arms control initiatives, aimed at reducing tensions and promoting détente. Special attention was paid to confidence building measures and crisis management. Out of the severe conflict, the superpowers found themselves acting together against ideas and actors that risked their own survival.

The balance of terror that dominated relationships of the superpowers has become the gatekeeper and guarantor of the nuclear threshold of non-use. The strong fear of escalation to a nuclear exchange motivated them to prevent crises before they arrived at a point of no return.

Since there was no one single issue that both the United States and the Soviet Union were ready to fight a major war over, the superpowers strove to conclude disputes by means short of the use of force. Détente was the outcome of this unique situation.

For the first time in history, the two superpowers were more concerned with their relations with peace keeping and crisis prevention and management than hegemonic struggle and imperialism. Several reasons advanced détente in their

relationship. First, technological advancements enhanced the fear of nuclear war and the desire to escape it. Second, lessening of ideological warfare in front of the growing nuclear threat. Since the 1960s, the dominant belief stated that "there are only two ways: either peaceful co-existence or the most destructive war in history" (Khrushchev 1976, 192). Third, despite the Vietnam war and similar war-threatening events, the superpowers learned to accept the status quo and chose not to risk a direct clash between themselves, not even a conventional one. In order to reduce risks and dangers, leaders of the superpowers have approached arms control methods.

Arms control efforts brought about many agreements and treaties, and contributed to the establishment of regimes in superpower relations. It encouraged the two opponents to negotiate and cooperate in order to solve disputes. The overall outcome of arms control was the moderation of the conflict between the two.

The beginning of attempts of arms control was quite slow and difficult. The main obstacle to successful negotiations was the inherent mutual distrust between the superpowers, because arms control negotiations dealt with disputes and ignored the basic tensions between the two. This distrust led to technical difficulties of agreeing upon inspection, verification and enforcement. It encouraged arms race and increased the fear of nuclear war. Nevertheless, the superpowers engaged in numerous arms control negotiations over

the years, and many agreements were reached. These attempts included agreements in three fields: area preventive, such as the Antarctica Treaty; crisis management, such as the hot line; and restraints on nuclear arms, as in the Test Ban Treaty and the Non Proliferation Treaty.

The major success of arms control negotiations is not in the number of written agreements, but in the consciousness that the belligerents necessarily have to cooperate in order to avoid the use of nuclear weapons, i. e., their mutual supreme interest. Moreover, these agreements have placed further psychological and political barriers on the way of deciding upon, or escalating to, nuclear exchange. As well, they provided a solid base for an ongoing dialogue between hostile countries. The frame of arms control talks enhanced the potential for managing crises and restraining controversial interests between the superpowers (George 1988).

Arms control bargaining between the two superpowers reveals four elements. First, both sides resorted to arms control out of self-help motivations to serve their own political interests, and not for moral or ideal causes (Keohane 1984). Second, the more effective arms control efforts dealt with issues of less significance. Third, arms control process had a strong impact on the formation and corrections of statesmen's perceptions. Thus, it reduced the risks of misperceptions and contributed to a better knowledge of the enemy. Fourth, tacit agreements were as important as written accords (Schelling 1986).

The outcome of the process of arms control was extensive cooperation between the United States and the Soviet Union. With time, they were capable of realizing common interests, avoiding unnecessary clashes, and improving their overall relations. Situations of high-interest symmetry, such as in Europe, led to regimes of crisis prevention and cooperation (George 1983). Although the more successive regimes were in areas other than security, the superpowers realized the incompatibility of direct military clashes between them. Furthermore, they have learned, and tacitly agreed upon, not to 'go on the brink.'

The most prominent outcome of arms control and cooperation between the superpowers was the ability to accommodate in order not to risk a war (George 1983). They learned to respect each other's spheres of influence and vital interests, and to restrain their allies accordingly. Finally, the superpowers realized the need to deal with the tensions between them, and they resorted to disarmament and political settlements. Hence, deterrence relations led the superpowers to nuclear peace--Pax Atomica (Harkabi 1983)--a state of 'no-war' dictated by the balance of terror.

The Middle East and South Asia

The regional context, although quite different from that of the superpowers, produces similar outcomes as the process of nuclearization proceeds. Thus, it is the argument of this study that the introduction of nuclear weapons, and the

adoption of deterrence, is likely to contribute to the evolution of regional nuclear peace. The case studies of the Middle East and South Asia revealed two regions in the process of nuclearization, which adopted an ambiguous strategy of deterrence. The regional balances of terror evolve hand-in-hand with the evolution of nuclearization. Nuclear capability of SNPs grows; proper delivery systems are acquired; nuclear threats are transmitted; and leaders' awareness of the involved dangers and great costs is developed. Leaders refer to the experience of the superpowers and learn how to handle nuclear arms and strategy. As well, there is a strong presence of the nuclear threshold in the minds of decision makers. Nuclear consciousness emerges in the two regions, leading old and bitter enemies to cooperate and negotiate rather than fight. The process of arms control--cooperation in order to avoid unwanted outcomes--is on its way in both regions. In the Middle East, arms control plays a preliminary role in the multilateral arms control talks which may lead to negotiation of comprehensive peace treaties. In South Asia, the process encourages a constant dialogue, on the one hand, and many confidence building measures, on the other. It reached its peak, at this time, in the agreement of no attack on each other's nuclear sites and the exchange of lists of nuclear installations.

The regional nuclearizing actors are all engaged in so-called peaceful nuclear programs. They refuse to admit their intentions to develop nuclear weapons, yet at the same time,

they build up and strengthen their delivery systems.

In the Middle East, Israel enjoys nuclear monopoly at this time, and its nuclear and delivery capability is the most advanced in the region. Many Middle Eastern states, Iraq and Iran in particular, are committed to nuclearization, and strive either to develop nuclear capability or to acquire a ready bomb. Iraq demonstrated its delivery capability during the Gulf War, and other Arab states are believed to have similar capabilities. None of the regional actors has constructed a sufficient second-strike capability.

The region of South Asia has reached a higher level of nuclearization. India conducted a nuclear test as early as 1974 and is believed to have accumulated enough nuclear material and know-how to produce nuclear warheads. Pakistan has produced uranium for several years, probably sufficient to have a nuclear option or even a bomb in the basement. China, although an outsider, is involved in the region by posing an additional nuclear threat to India and optional nuclear assistance to Pakistan. India and Pakistan have acquired advanced delivery systems, yet neither of them is known to have established a stable second-strike capability.

The balance of terror between the superpowers was enhanced by MAD and second-strike capability. In the Middle East and South Asia there are two essential factors, vulnerability and uncertainty, that compensate for the insufficient second-strike capability at this time, and contribute to a stable regional balance of terror. In the

Middle East there is a great concentration of vulnerability in only a few targets in each country. Therefore, it is necessary to hit three to five targets of any actor in order to eliminate it as a state. This fact poses enormous hesitation in decision making processes. It amplifies the uncertainty and fear of leaders in regard to employing a successful first strike. The excessive costs involved in retaliation, even by one warhead on one target, insert many reservations in the hearts of statesmen. In South Asia, the unique structure of the population, geography and weather patterns, complicate any possible decision to use nuclear weapons, and augments vulnerability of both sides. The heavy concentration of Muslim population in Indian cities within the possible range of Pakistani delivery systems, the kinship ties of Pakistani and Indian Muslims, and the concentration of population in a small number of cities, are all obstacles to deciding upon nuclear use. The geographical proximity and unclear meteorological conditions cast another barrier before a nuclear attack is launched.

Actors in both the Middle East and South Asia have adopted 'ambiguity' as their preferred nuclear strategy. The essence of deterrence under ambiguity is the retaining of the nuclear option as a 'last resort', when the survival of the state is at stake. Thus, nuclear threats are implicitly issued, and uncertainty surrounds the nuclear capability of the actor.

Israel was the first SNP to adopt 'deterrence by

excessive uncertainty' (Feldman 1982). The deterring effect of this strategy was demonstrated during the 1973 war, and thereafter. It reached its peak during the Gulf War. Since the 1970s, the number of expressed Arab threats to 'throw the Jews into the sea' and to demolish the state of Israel have declined, almost ceased. It seems that Arab leaders have accepted the existence of the state of Israel in the Middle East, mostly thanks to Israel's nuclear capability and implied deterrence which convinced them of the inability to defeat Israel.

While India choose ambiguity concerning its real nuclear capability out of international considerations, Pakistan has followed the Israeli example. As early as 1974, Pakistan started to release implicit nuclear threats toward India, in an attempt to increase Indian uncertainty about the extent of Pakistan's nuclear capability. It seems that both states are aware of the nuclear potential of each other, yet the number of referrals to the nuclear issue is relatively low in South Asia. Nevertheless, the belligerents pay close attention to the balancing influence of the nuclear invaders in the region, such as China's undeclared alliance with Pakistan.

The examination of leaders' expressions over time suggests that consciousness of the devastating outcomes of nuclear use has been well developed. Moreover, it was noted that nuclear threats and deterrent messages have been clearly transferred and received. Statesmen in both regions are aware of the involved capabilities, sensitive to the enormous costs

and their own vulnerability, and restrain themselves as far as possible. The existential logic of nuclear deterrence is comprehended as requiring communication and management of crises through arms control. Nuclear socialization is at work.

Regional actors have followed the footsteps of the superpowers in their efforts of arms control, although regional success is limited. In the superpowers' relation, it was the severe Cuban Missile Crisis which led to arms control negotiations and détente. In the Middle East, arms control negotiations and tacit agreements accelerated following the 1973 War. The Egyptian-Israeli peace treaty of 1979 is a direct consequence of the post-war talks. Other Arab states, such as Syria and Jordan, emphasized tacit agreements more than direct negotiations, and managed to maintain relations of 'no-war' with Israel for more than twenty years.²²⁴ The most successful arms control measure was the creation of demilitarized zones, as well as the recent multilateral arms control talks which started in Madrid, 1991. Nonetheless, efforts toward a regional nuclear-free zone failed.

In recent years the Arab confrontation states are involved in direct peace negotiations with Israel. It is the conviction of the author of this study that Israel's nuclear deterrent has played a major role in bringing the Arabs to the negotiation table. As well, many regional statesmen

²²⁴ Syria engaged in fighting against Israeli forces in Lebanon, 1982, yet the no-war status was kept along its borders with Israel.

identified the need for cooperation and arms control in a nuclear Middle East. Heikal of Egypt called for cooperation under nuclear deterrence as early as 1977²²⁵, and Israel advanced arms control measures during the early 1990s. Hence, moderation of conflict is likely, since the bitter enemies not only build confidence and manage crises. They also deal with core issues at stake, such as their territorial claims and the Palestinian problem.

In South Asia, the actors resorted to arms control and confidence building measures. Among the prominent ones are the hotline and the no-attack-on-nuclear-facilities agreements, as well as the closer diplomatic contacts. Although the number of successful arms control agreements is relatively low, the dialogue between India and Pakistan has persisted for a long period of time, and the two countries have showed impressive restraint during recent conflicts and border clashes. Diplomatic relations between the traditional enemies are improving: mutual official visits are taking place; and recently the two leaders exchanged lists of nuclear facilities not to be attacked. It is also worthwhile mentioning that tacit agreements between India and Pakistan, especially during wars, are quite common.

The relationships of India and Pakistan are still hostile in nature. Nonetheless, improvement is anticipated thanks to the establishment of effective confidence building measures. The two sides are traditionally sensitive to population and

²²⁵ Al-Anwar, 12, 15, 19 June 1977.

similar costs, and are aware of their immense vulnerability to nuclear attack. On the other hand, India and Pakistan do not emphasize the disputed issues in their negotiations, and thus, are liable to face some serious difficulties in regional tension reduction.

The tendency of accommodation in the two regions, the Middle East and South Asia, is farther enhanced by the possible intervention of third party for the prevention of escalation to nuclear use. While the superpowers had no one to count on for such an assistance in their relations, there is a high probability that the nuclear powers and the U.N. will intervene in future regional crises, when regional actors might loose control over events and escalate. The supreme interest of all states tends to strengthen this probability, which is by itself a further enhancement of the tendency to accommodate and moderate conflicts. In the recent years, the nuclear superpowers and the U.N. have demonstrated a tendency to develop an international responsibility and to intervene in conflicts which endanger world security and peace.

SNPs in conflicting regions are liable to face greater difficulties in advancing arms control negotiations into disarmament talks, as did the superpowers. The main reason behind this assessment is the different 'quality' of tensions between the superpowers and the conflictive regions. In the basis of the superpowers' conflict stood ideology and power struggle. Once they learned to relax ideological tensions, to respect each other's sphere of influence, and to avoid direct

clashes, they found it easier to proceed. In the regional context, however, religious disagreements and struggle flame the conflicts. This kind of tensions seems to be harder to negotiate because of the high intensity of emotions involved.

To sum up, this study considers nuclear proliferation into conflictive regions as unavoidable, and acknowledges the contribution of the subsequent deterrence strategies to moderation of conflicts. The introduction of nuclear arms to conflictive regions, as well as in the superpowers context, increased the vulnerability of the involved actors and exposed them to unbearable potential costs. A credible mutual deterrence enhanced stability between the superpowers, while uncertainty about a successful first strike stabilized the regions.

The emerging balances of terror that stemmed from either second strike capability or uncertainty, advanced nuclear deadlocks, promoted nuclear consciousness, and stimulated the nuclear threshold among statesmen. The validity of the nuclear threshold between nuclear use and non-use encouraged the mutual interest of belligerent actors--exhausting all possible means before the resort to the use of nuclear weapons.

The actors felt the necessity to cooperate in order to reduce tensions and risks of unpremeditated war, and sought measures of arms control. The attainment of arms control is found, first of all, in the mutual recognition in the need to cooperate with the enemy. Arms control creates a basis for

persistent negotiations and for correction of misperceptions regarding the enemy. As such, the process of arms control contributes to realization of common interests among adversaries. Through the process, the adversaries become aware of the uselessness of war, they prefer accommodation over the use of force, and they learn to respect the vital interests of the other side.

The strongest evidence for the validity of the hypothesis of this study is minimization of the use of force between nuclear antagonists. The superpowers had never clashed directly with each other once they acquired nuclear weapons. In the Middle East, the Arab confrontation states did not go to war against Israel since 1973, when they realized Israel's nuclear capability, and the two sides are involved in peace talks at present. It happens in a region which knew five bitter wars in the preceding era, between 1948 and 1973. Similarly, the region of South Asia witnessed three painful wars from 1947 to 1971. Regional nuclearization took place in the early 1970s, and since then, there were no wars between India and Pakistan.

As aforementioned, this is not to suggest that war is impossible between nuclear adversaries. Rather, this analysis advises that war is highly unlikely because neither actor is ready to risk the anticipated costs in order to change the status quo at the present time. Furthermore, in the regional context a nuclear exchange means a holocaust for the involved actors, and even the end of their existence (Harkabi 1983).

SNPs, therefore, can be expected to be as careful in their relations as the superpowers. The outcome of nuclearization, thus, is accommodation and nuclear stalemate, moderation of conflicts and nuclear peace.

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